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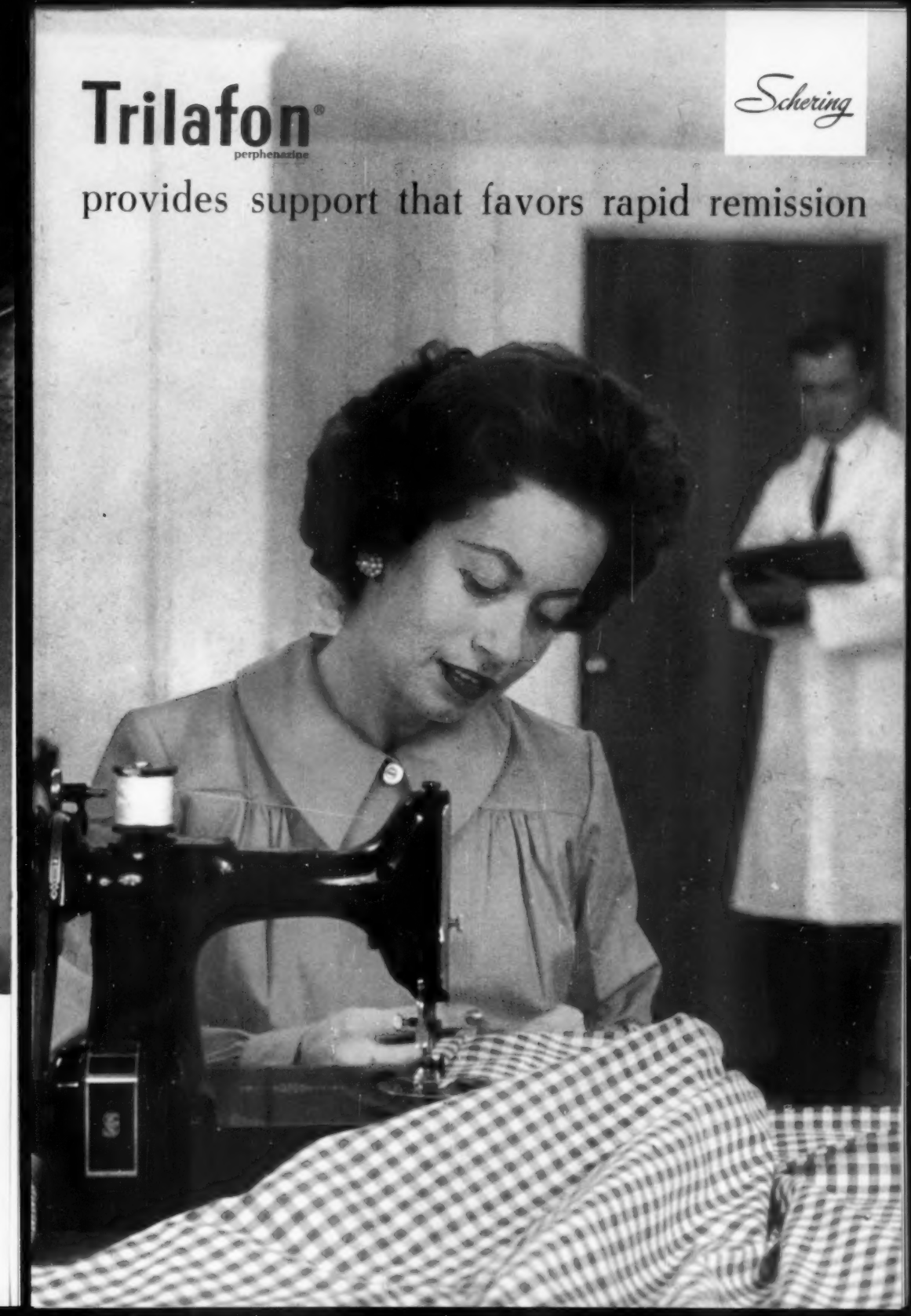
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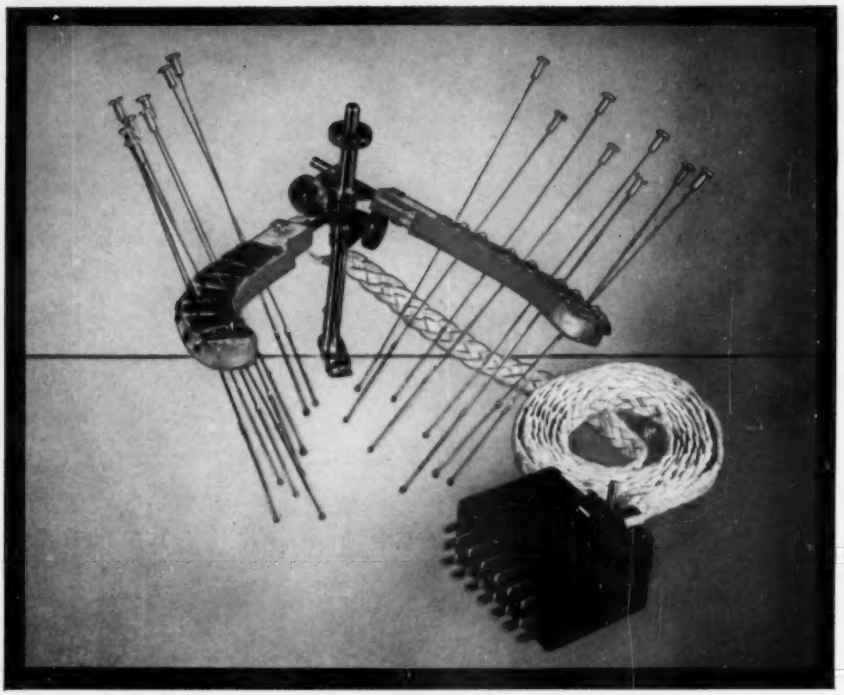

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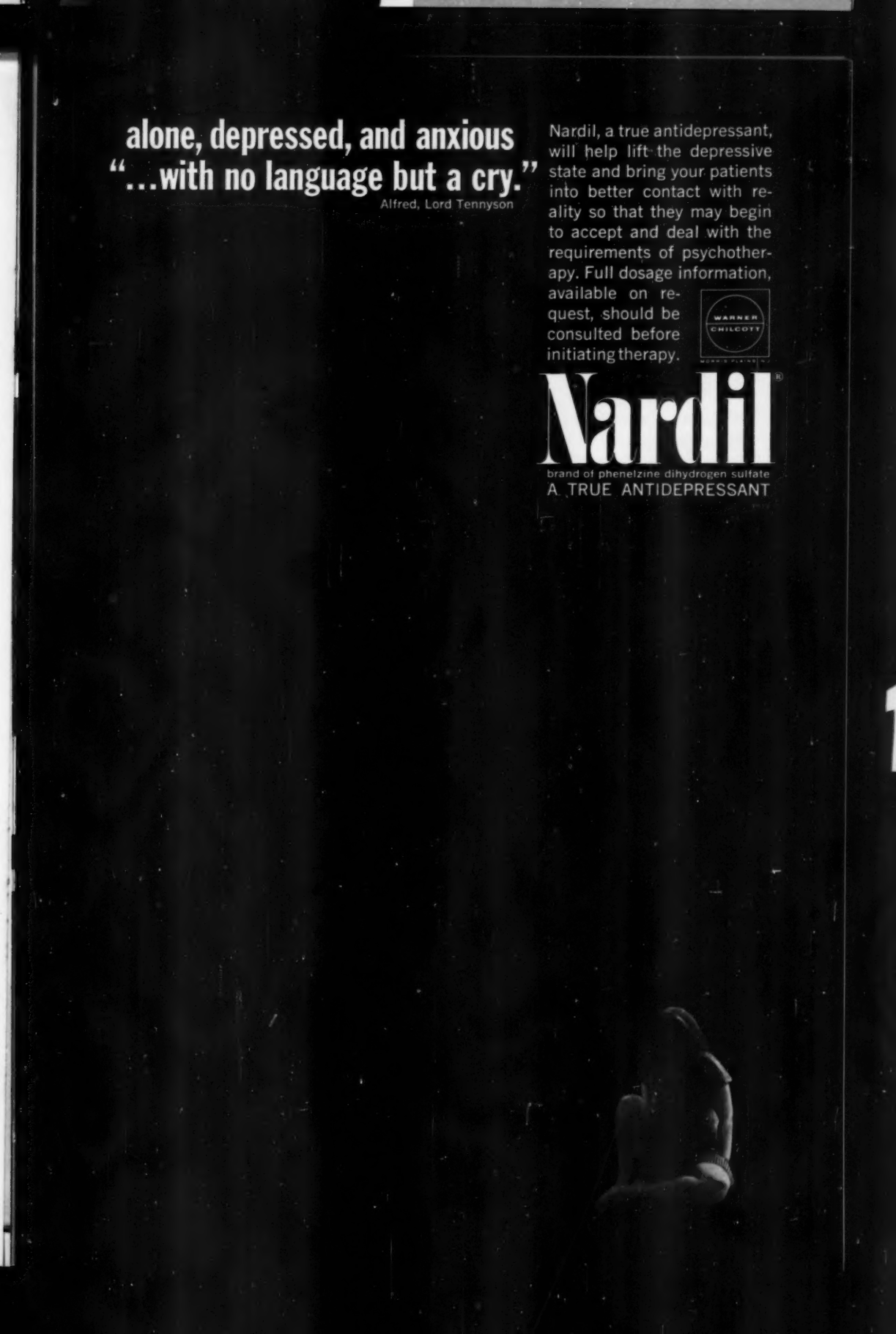

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NOTE: In depressed patients, the possibility of suicide should always be considered and adequate precautions taken. Exclusive reliance on drug therapy to prevent suicidal attempts is unwarranted, as there may be a delay in the onset of therapeutic effect or an increase in anxiety and agitation. Also, of course, some patients fail to respond to drug therapy.

DOSAGE: Dosage should be adjusted to the requirements of the individual patient. Dosage increases should be made only in increments of 10 mg. per day and ordinarily at intervals of one to three weeks. Side effects occur more often as dosage is increased.

Reduction from peak to maintenance dosage may be desirable before withdrawal. If withdrawn prematurely, original symptoms will recur. Experimental work indicates that inhibition of monoamine oxidase persists for only a few days after withdrawal. Thus, any side effects due to this inhibition will probably recede rapidly upon withdrawal, which should be a distinct advantage of 'Parnate' therapy when the patient exhibits poor tolerance to antidepressant medication.

Standard dosage schedule

1. Recommended starting dosage is 20 mg. per day—10 mg. morning and afternoon.
2. Continue this dosage for 2 to 3 weeks.
3. If no response, increase dosage to 30 mg. daily—20 mg. upon arising and 10 mg. in the afternoon.
4. Continue this dosage for at least a week.
5. As soon as a satisfactory response is obtained, dosage may usually be reduced to a maintenance level.
6. Some patients will be maintained on 20 mg. per day; many will need only 10 mg. daily.

When ECT is being administered concurrently, 10 mg. b.i.d. can usually be given during the series, then reduced to 10 mg. daily for maintenance therapy.

NOTE: Because side effects are dose-related, dosage should not be raised above 30 mg. per day unless the physician first becomes familiar with the information on the use of intensive dosages of 'Parnate' in patients who are hospitalized or under comparable supervision. See available comprehensive literature, your SK&F representative, or your pharmacist.

SIDE EFFECTS: The patient may experience restlessness, overstimulation, or insomnia; may notice some weakness, drowsiness, episodes of dizziness, or dry mouth; or may report nausea, diarrhea, abdominal pain, or constipation. Occasionally, headaches have occurred. Symptoms of postural hypotension have been seen most commonly, but not exclusively, in patients with preexistent hypertension; blood pressure returns to pretreatment levels rapidly upon discontinuation of the drug. Other side effects which might occur in rare instances are tachycardia, urinary retention, significant anorexia, skin rashes, edema, palpitations, blurred vision, tinnitus, chills, paresthesia, muscle spasm and tremors, impotence, sweating and possibly paradoxical hypertension.

for faster relief of mental depressions

True antidepressant effect. "Those patients who responded to ['Parnate'] therapy experienced increased energy and interest without euphoria and restlessness; they were relieved of their thoughts of guilt and worthlessness, and looked and felt cheerful."[3]

Valuable in psychotherapy. ". . . when the patient recognized the improvement that was taking place [during 'Parnate' therapy], his participation in psychotherapy increased markedly, and subsequent improvement was rapid."[4]

SK&F Smith Kline & French Laboratories, Philadelphia
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Most of these side effects can usually be relieved by lowering the dosage or by giving suitable concomitant medication.

CAUTIONS: Extensive clinical and laboratory work has shown that there is little likelihood of blood or liver toxicity. Since 'Parnate' is a non-hydrazine compound, it should prove to be exempt from the toxic effects on the liver thought to be due to the hydrazine moiety of some other drugs. However, severe toxic reactions have occurred with some monoamine oxidase inhibitors. Pending further clinical experience 'Parnate' should probably not be used in patients with a history of liver disease or in those with abnormal liver function tests. Drug-induced jaundice is often difficult to differentiate from other jaundice. However, there has been sufficient clinical experience with 'Parnate' to demonstrate that, if it has any potentiality for producing jaundice, the reaction must be rare. Also, the usual precautions should be observed in patients with impaired renal function since there is a possibility of accumulative effects in such patients.

Although 'Parnate' has been used in combination with various drugs (particularly Stelazine®, brand of trifluoperazine), some monoamine oxidase inhibitors have been reported to have marked potentiating effects on certain drugs, e.g., sympathomimetics, central nervous system depressants, hypotensive agents and alcohol. Therefore, the physician should bear in mind the possibility of a lowered margin of safety when 'Parnate' is combined with potent drugs and should adjust dosage carefully.

'Parnate' should not be used in combination with imipramine. (The reaction of a patient who attempted suicide with a deliberate overdosage of 'Parnate' and imipramine was more severe than would have been predicted from the properties of either drug.)

CASES REQUIRING SPECIAL CONSIDERATION: Administer with caution to patients with recent myocardial infarction or coronary artery disease with angina of effort. Increased physical activity and, more rarely, hypotension have been reported. The pharmacologic properties of 'Parnate' suggest that it may have a capacity to suppress anginal pain that would otherwise serve as a warning sign of myocardial ischemia. When 'Parnate', like any agent which lowers blood pressure, is withdrawn from patients who tend to be hypertensive, blood pressure may again rise to undesirable levels.

When 'Parnate' is combined with a phenothiazine derivative or other compound known to affect blood pressure, elderly patients and those with cardiovascular inadequacies should be observed more closely because of the possibility of additive hypotensive effects.

In patients being transferred to 'Parnate' from another monoamine oxidase inhibitor or from imipramine, allow a medication-free interval of one week, then initiate 'Parnate' using half the normal dosage for at least the first week of therapy. Similarly, a few days should elapse between the discontinuance of 'Parnate' and the administration of another monoamine oxidase inhibitor or of imipramine.

Because the influence of 'Parnate' on the convulsive threshold is variable in animal experiments, suitable precautions should be taken if epileptic patients are treated.

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Comments from the literature:

"... method of choice."

Havens, L. L.: Dis. Nerv. System *19*:1 (Jan.) 1958.

"... recommend its use."

Impastato, D. J., and Gabriel, A. R.: Am. J. Psychiat. *114*:698 (Feb.) 1958.

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Robie, T. R.: J. M. Soc. New Jersey *52*:82 (Feb.) 1955.

Complete literature available upon request.

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THE AETIOLOGY AND TREATMENT OF CHILDREN'S PHOBIAS: A REVIEW

S. RACHMAN, AND C. G. COSTELLO [1]

The past few years have seen the establishment of two conflicting views regarding phobias in children. Most workers in this field, psychiatrists and psychologists, are influenced to a greater or lesser extent by either the psychoanalytic theory or the behavior theory in their approach to the subject of phobias. For this reason we have resticted our review primarily to these two theories.

PSYCHOANALYTIC THEORY

The psychoanalytic theory of phobias derives very largely from Freud's case history of Little Hans(14) which was published in 1909. The essentials of the phobic theory were presented in this paper and appear to have undergone little change in the past 50 years.

The theory states that the basis for phobic disturbances is the Oedipus Complex. The child desires to possess the mother sexually and is jealous and hostile towards the father. The child fears his father because of these hostile wishes and, in particular, dreads castration. The fear of the avenging father is then projected onto some external and formerly innocuous object. The outbreak of the phobia is generally preceded by a period of privation and/or intensified sexual excitement.

This development of phobias may be analysed into the following components.

1. The child "is fixated at the oedipal or pre-oedipal level"(22).

Freud(11) states that psychoanalysis has "often showed that animal (phobic object) was a substitute for the father, a substitute on to which the fear of the father derived from the Oedipus complex has been displaced."

(1a) The child has a sexual desire for the mother.

This aspect of the theory is stressed in the case of Little Hans(14). In a discussion on the psychogenesis of agoraphobia in childhood, Abraham(17) illustrates Freud's theory by referring to case material: The phobic child had "an incestuous wish for sexual possession of her (the mother)."

(1b) The child is jealous of, and hostile to, the father.

In the discussions by Abraham mentioned above, he also makes explicit the child's hostility to the father—he had "a death wish against his father."

2. The child fears the father.

Freud(12) states that "the animals which play a part in the animal-phobias of children are generally father-substitutes."

He also says that "the instinctual impulse subjected to repression here (in animal phobias) is a libidinal attitude to the father, coupled with a dread of him. After repression this impulse vanishes out of consciousness"(15).

(2a) The child has castration fears.

> The anxiety experienced by the child when he is confronted by the object of his phobia is a danger signal set off by his ego and the danger which is being signalled in this way is invariably the danger of castration(13).

And again, "the fear in zoophobia is castration anxiety on the part of the ego"(13).

3. The fears of the father and of castration are projected onto a neutral external object.

Castration anxiety, states Sarason, *et al.* (26) results in

> the displacement or projection of the dangerous connotations upon an external (previously innocuous) object or situation. After this occurs the original castration anxiety is elicited by a different object and therefore is expressed only in a distorted form.

In Freud's words(9) "... castration anxiety is given another object and a distorted expression—namely that of being bitten by a

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horse . . . instead of being castrated by the father."

4. The onset of the phobia is often preceded by a period of privation and/or sexual excitement.

"An increase in sexual longing, fear or guilt, reactivates the oedipal or pre-oedipal fear of sexual injury to the mother . . . " (22).

Freud(14) attaches importance to this precipitant in the Little Hans case as does Bornstein(2) in the case of Lisa.

5. The onset of the phobia is generally preceded by an anxiety attack which is associated with the phobic object.

Freud(13) states that "a phobia generally sets in after a first anxiety attack has been experienced in specific circumstances such as in the street or in a train or in solitude." Similarly, Abraham is quoted as stating that "in general, the phobic reaction to a specific object or situation becomes established only after the child has experienced an anxiety attack while interacting in some way with the particular object or situation"(26). The initial anxiety attack itself however is produced by castration fears. "The phobic process begins when the ego recognizes the danger of castration and consequently gives a signal of anxiety"(26).

6. Phobias only develop in people with disturbed sexual adjustments.

Freud(10) states that, "the main point in the problem of phobias seems to me that *phobias do not occur at all when the vita sexualis is normal,*" (original italics).

He says further, "My theory is only to be gainsaid by evidence of phobias occurring together with a normal vita sexualis."

Watson and Rayner's(31) laboratory demonstration of the development of a phobia in little Albert (see below) must bring into question 5 of the 6 elements of the psychoanalytic theory as does the evidence discussed in the works of Wolpe(32), Eysenck (7, 8) and Jones(19). Point 5, however, approaches close to the learning theory account of phobias described below. The learning theory position is that the onset of the phobia is not merely preceded by an anxiety attack which is associated with the phobic object but that the anxiety attack is generally the major cause of the phobia.

More generally, Ellis(6) argues that

> the vague, suppositional and multi-interpretive terms in which the theoretical framework of orthodox analysis is usually stated make it almost impossible to test its concepts by normal psychological methods of investigation.

And we may add, it also makes it almost impossible to appraise the internal consistency and logic of psychoanalytic theory—as a theory.

Ellis(6) has criticised the unscientific nature of psychoanalysis and emphasizes the inadequacies and confusion of the theory, the unreliability of the supportive evidence, the failure to submit any part of the theory or practice of psychoanalysis to acceptable scientific test. One of Ellis's most insistent complaints is against the rampant speculation so common in psychoanalysis. As we hope to demonstrate below, one of Ellis's comments on a passage of Freud's writings seems in fact to be applicable to a large body of psychoanalytic literature. He remarks that, "the ratio of speculative statements to empirically adduced facts . . . is slightly overpowering."

PSYCHOANALYTIC EVIDENCE

Clinical evidence serves a double purpose in psychoanalysis. It is used in order to construct the theory and also to support the theory. Some serious deficiencies present in psychoanalytic case material have been discussed in a critical examination of Freud's treatment of the famous Little Hans case (33). Although the criticisms which we offer here may all be applied equally well to the Little Hans case, we have restricted our comments to other well-known case histories in order to emphasise that these flaws are the rule rather than the exception.

ELABORATION

Bornstein(2) presents an account of a girl of 2 yrs. 4 mths. who developed a phobia of lying down. At one point, Bornstein writes, "She was asked directly what she really had to fear in bed. She replied with a recital of misdeeds having the character of severe self-reproach." The following is an example of what the child said, "See

cup ow." Bornstein states that this means ("translated into the language of the adult") "See the cup is broken, has pain (ow) and it is my fault." We suggest that this is an elaboration, particularly the claim that the child felt at fault.

Later we read that the child used to masturbate by rubbing her legs together. Then, the mother reported, she stuck diapers or table napkins between her legs. Bornstein comments, "As if wishing to demonstrate that her genitalia were not 'Ow,' not damaged, that in other words she possessed a male genitalia."

A more extensive elaboration is given in an account of one of the child's dreams. The child reported the dream thus; "Opa dudu." Bornstein gives as a direct literal translation "Grandpa naughty naughty," but writes also that it "meant that her grandfather had appeared to her in a dream and had either threatened or spanked her." Later the dream was apparently better understood and Bornstein writes, "The little girl's favourite game before she was sick had been the 'Kuckuck game.' This consisted in hiding and then calling "Kuckuck" which the child who still spoke very imperfectly often used to pronounce 'Duduck' or really almost 'Dudu.' The dream therefore said 'Grandfather is hiding, has gone away.'"

Further elaborations are given in connection with two incidents. (a) The grandfather on one occasion when out with the child had gone behind a tree and urinated. (b) The grandfather had taken the child's mother away for a short period in order to look after the sick grandmother. "Opa Dudu" finally means "If I am not good mother will be taken away by grandfather." But over and above this, it also expressed the wish that "her grandfather would play Dudu again—that is disappear and expose his penis." We suggest that this also reveals a tendency towards over-elaboration.

SUGGESTION

Schnurmann(27) gives an account of a girl, Sandy, who developed a dog phobia at the age of 2 yrs. 5 mths. At that time (1944) she was in the Hamstead Nursery. One night she had a nightmare: "She told the nurse a dog was in her bed." Schnurmann comments later that,

> As Sandy had up to then not shown any special interest in dogs it seems strange that in the dream the dog was invested with great significance. An explanation may be found in the following facts: "When the nursery children were taken out in a group an encounter with a dog was usually met by some kind of emotion on the part of the other children. The fear of dogs at night continued for the next three nights. Statements like "Out, out, out, doggie coming" were made. On the fourth night, "Sandy undertook a thorough inspection of her genitals. She was deeply absorbed in this activity and did not take any notice of our presence (two therapists). The worker told her that everything was all right there and that all girls looked like that.
>
> The next day, "On the way to the nursery some of our children started to play with a strange dog. I explained to them that he might bite if they frightened him." It is noteworthy that it was only from this time that the child showed signs of fear of dogs in the street. The main point, however, is that it was only after the worker had drawn the child's special attention to her genitals and after the worker had suggested that the dog might bite, that Sandy herself began to talk about biting. Two nights later Sandy said to the worker, "Bite Annie Bite."
>
> "I asked 'Where bite?' She lifted her nightie pointed to her genitals and said, 'There bite.'"
>
> There was a considerable amount of talk about biting for the remainder of the therapy which enabled the therapist to conclude that, "In the nightmare—as it became clear in Sandy's subsequent behaviour and remarks—a dog was assaulting Sandy in her bed, injuring her genitals, *i.e.*, biting off her penis."
>
> It is also noteworthy that after Sandy's attention had been drawn to the 'rightness' of her genitals she became quite concerned about the rest of her body and clothes—fingers, legs, coat, hat. They all became penis symbols by displacement apparently.
>
> It is felt that, after having given the child the idea that genitals are all right (or all wrong) and also warning her that dogs bite, to regard her subsequent concern with these ideas as confirming the analysis is unsatisfactory and not convincing.

INVERSIONS AND NON-ACCEPTANCE

A common feature of psychoanalytic case reports is the refusal to accept the patient's accounts and to attach instead a reversed meaning to his testimony. The tendency is clearly illustrated in the case of Frankie, aged 4½, reported by Bornstein(3). For example, the boy reported a dream in which he, the room and two other persons were falling down. Bornstein comments, "Actually, the emphasis on 'going down' was a representation of its opposite being lifted up."

We feel then the psychoanalytic theory of phobias is inadequate for the following reasons: 1. The theory is complex and loosely formulated. 2. The evidence is not related clearly to the theory by means of predictions from the theory. 3. The evidence is manipulated through over-elaboration and inversion to fit into the theory and sometimes the patient himself is manipulated by suggestion so that his behavior may fit into the theory.

We will now proceed to an account of an alternative theory—Behavior Theory—which has been presented to account for the development and treatment of phobias.

A BEHAVIOR THEORY OF PHOBIA

The past decade has seen the growth of a new theory of neurotic behavior which has been developed from learning theory. Expositions of the general theory are provided by Wolpe(32) Eysenck(7, 8), Jones (19).

The position adopted by this theory is that neurotic behavior is acquired. The process of acquisition implied in the theory is derived from Hull's system.

Wolpe(32) defines neurotic behavior as "any persistent habit of unadaptive behavior acquired by learning in a physiologically normal organism." Anxiety is "usually the central constituent of this behavior, being invariably present in the causal situations."

In similar vein, Eysenck(7) postulates that, "neurotic symptoms are *learned patterns of behavior* which for some reason or another are *unadaptive*," (original italics). Neurotic behavior patterns persist paradoxically, because they are unpleasant. Having acquired an unpleasant association and reaction to a particular stimulus or situation, the person will tend to avoid exposure to these noxious circumstances. As learned patterns of behavior can only be extinguished by repeated unreinforced evocations, the tendency to avoid the noxious situation often precludes the possibility of a spontaneous disappearance of the neurotic behavior. Furthermore, if the person does come into contact with the noxious stimulus he generally responds by withdrawing. This withdrawal is followed by a reduction in anxiety and will reinforce the avoidance behavior mentioned above. This then is what Eysenck(7) refers to as "the vicious circle which protects the conditioned fear response from extinction."

As is the case in all learned responses, neurotic reactions are subject to stimulus generalization. That is, a range of stimuli similar to the original noxious stimulus may also evoke the neurotic reaction.

It should be noted also that neurotic symptoms may under certain circumstances result "not from the learning of an unadaptive response, but from the failure to learn an adaptive response"(19). An instance of this type is enuresis nocturna.

The experimental evidence which supports the behavior theory of neurosis is discussed in Wolpe(32), Eysenck(7, 8), Jones(19).

In terms of the behavior theory, *phobias* may be regarded as conditioned anxiety (fear) reactions.

Any neutral stimulus, simple or complex, that happens to make an impact on an individual at about the time that a fear reaction is evoked acquires the ability to evoke fear subsequently. If the fear at the original conditioning situation is of high intensity or if the conditioning is repeated a good many times the conditioned fear will show the persistence that is characteristic of *neurotic* fear; and there will be generalization of fear reactions to stimuli resembling the conditioned stimulus(33).

The experimental evidence supporting this view of phobias is discussed in Wolpe (32) and Wolpe and Rachman(33) and is derived from studies of the behavior of children and of animals. The classical demonstration of the development of a phobia in a child was provided by Watson and Rayner

(31) in 1920. Having first ascertained that it was a neutral object, the authors presented an 11-month-old boy, Albert, with a white rat to play with. Whenever he reached for the animal the experimenters made a loud noise behind him. After only 5 trials Albert began showing signs of fear in the presence of the white rat. This fear then generalized to similar stimuli such as furry objects, cotton wool, white rabbits. The phobic reactions were still present when Albert was tested 4 months later.

The process involved in this demonstration provides a striking illustration of the manner in which phobias develop and may be represented in this way :

1. Neutral Stimulus (rat) → Approach R
2. Painful noise stimulus (UCS) → Fear (UCR)
3. Rat (CS) + noise (UCS) → Fear
4. Rat (CS) → Fear (CR)
5. Rabbit (GS^1) → Fear (GCR)
6. Cotton Wool (GS^2) → Fear (GCR)

The essentials of the theory may be summarized in 6 statements.

1. Phobias are learned responses.
2. Phobic stimuli, simple or complex, develop when they are associated temporally and spatially with a fear producing state of affairs.
3. Neutral stimuli which are of relevance in the fear-producing situation and/or make an impact on the person in the situation, are more likely to develop phobic qualities than weak or irrelevant stimuli.
4. Repetition of the association between the fear situation and the new phobic stimuli will strengthen the phobia.
5. Associations between high intensity fear situations and neutral stimuli are more likely to produce phobic reactions.
6. Generalization from the original phobic stimulus to stimuli of a similar nature will occur.

Each of these 6 statements is based on experimental evidence and would also appear to be consistent with clinical experience(32, 8). All are supported by Wolpe's experiments(32) and evidence for specific statements is provided by Liddell(25), Jones(19), Watson and Rayner(31), Eysenck(8) and Gantt(16) among others. It can be legitimately argued in fact that these propositions are supported by the full weight of almost all the evidence accumulated in research on the learning process.

BEHAVIOR THERAPY

The essence of Behavior Therapy is clearly deducible from the theory. If neurotic behavior is acquired (learned) it should be amenable to 'un-learning' in a manner similar to that whereby non-neurotic acquired behavior is extinguished. The two major decremental processes in learning are inhibition and extinction. Numerous therapeutic procedures based on these processes have already been developed(32, 8) and additional techniques are now under investigation. The indications are that these methods are successful in a variety of neurotic disturbances(7, 8, 32), but a definitive conclusion must be postponed until a properly designed and controlled experimental test has been conducted. Such an investigation admittedly poses serious and difficult practical problems but on theoretical grounds, behavior therapy is eminently suited for such an investigation. The hypotheses and procedures are clearly defined and manipulable and a satisfactory study can be expected to provide a relatively unambiguous answer.

Most of the case-reports available to date which deal with the treatment of children's phobias involve the use of Wolpe's 'inhibitory therapy.' He defines the principle of reciprocal inhibition psychotherapy :

> If a response antagonistic to anxiety can be made to occur in the presence of anxiety-evoking stimuli so that it is accompanied by a complete or partial suppression of the anxiety responses, the bond between these stimuli and the anxiety responses will be weakened(32).

The method may be illustrated by referring to some actual case reports which we summarize briefly here.

A 3-year-old boy, Peter, evinced fear of white rats, rabbits, fur, cotton wool and other stimuli along this continuum. He was treated by Jones(21) using de-conditioning methods. It was decided to work on the rabbit phobia as this seemed to be a focus of Peter's fears.

Peter was gradually introduced to contacts with a rabbit during his daily play period. He was placed in a play group with 3 fearless children and the rabbit was brought into the room for short periods each day. Peter's toleration of the rabbit was gradually improved. The progressive steps observed in the process included : "rabbit in cage 12 feet away tolerated . . . in cage 4 feet away tolerated . . .close by in cage tolerated . . . free in room tolerated . . . eventually, fondling rabbit affectionately." Another measure employed by Jones involved the use of feeding responses. "Through the presence of the pleasant stimulus (food) whenever the rabbit was shown, the fear was eliminated gradually in favor of a positive response."

Using these techniques Jones overcame not only Peter's fear of rabbits but all the associated fears. The follow-up of this case showed no resurgence of the phobia.

Lazarus and Rachman(24) describe the treatment of a 14-year-old boy who had suffered from a fear of hospitals and ambulances for 4 years. The phobia had developed after the prolonged illness and suffering experienced by his mother. She had been taken from the house several times by ambulance and spent over a year in hospitals.

The boy was first trained to relax. Hierarchies of disturbing situations concerning ambulances and hospitals were then constructed, ranging from mildly upsetting to extremely upsetting items. The lowest item in the ambulance hierarchy for example, was a mental image of a derelict ambulance in a scrap-yard and the highest item an image of sitting beside the driver in a moving ambulance. The therapist then slowly worked up the hierarchies desensitizing each item by relaxation responses. After 10 interviews, the boy was much improved and was able to visit a hospital. Four months later he was still quite well.

The third case, reported by Lazarus(23), deals with an 8-year-old boy who developed a fear of moving vehicles 2 years after having been involved in a motor accident. Initially the therapist rewarded the boy whenever he made a positive comment concerning vehicles, by giving him a piece of his favorite chocolate. By the third interview the boy was able to talk freely about all types of moving vehicles. Next a series of "accidents" with toy motor cars was demonstrated. The boy, John, was given chocolate after each accident. Later John was seated in a stationary vehicle and slow progress (with chocolate feeding reinforcements used at each point) was made until John was able to enjoy motor travel without any anxiety.

Lazarus also describes the successful treatment of a case of separation anxiety and a case of dog-phobia. Case reports describing the treatment of phobias in adults are provided in Eysenck(8).

REINTERPRETATION OF PSYCHOANALYTIC CASES

A further advantage of behavior theory is that it can account for and incorporate a good deal of evidence presented by psychoanalysts. We will illustrate this with several examples from the literature.

A number of psychoanalysts when discussing school phobia have stressed the importance of getting the child back to school early. Eisenberg(5) writes, "In general, the longer the period of absence from school before therapeutic intervention is attempted the more difficult treatment becomes." In explanation he writes, "Left at home the patient . . . is reinforced to persist in infantile manoeuvering by the 'success' of his efforts." This point has also been stressed by the workers at the Judge Baker Guidance Center(4, 18, 29, 30). No attempt is made, however, to incorporate this important aspect of therapy in the psychoanalytic theory. This therapeutic procedure is in a sense even contradictory to the theory insofar as it is symptom-oriented. This failure to account for important data by means of the theory can be added to the list of deficiencies above.

The importance of the early return to school can be accounted for by the behavior theory of phobias in the following manner :

As learned responses (including fear) can only be abolished by extinction or inhibition, no reduction of the school phobia can be expected to occur if the person is entirely isolated from the noxious situation. Furthermore, continued absence from school will certainly reinforce the phobic pattern. It will have this effect because of the reduction in school-anxiety which is produced when the person refrains from attending school. Like all learned behavior, phobic responses are strengthened by drive reduction, in this case, reduction of the anxiety drive.

Another aspect of therapy for school phobias has been stressed by some psychoanalytic writers. Klein(22) writes :

> The child is told he must go to school every day, but does not have to stay there and does not have to attend the classroom. The child can stay in an office, assist the office staff, read or draw and can leave at any time.

This graded approach is another aspect of therapy not in keeping with the general psychoanalytic approach and not accounted for by the theory. It is on the other hand a procedure which directly follows from the behavior theory of phobias.

Though the psychoanalytic case histories referred to in this paper are long and complex, most of the data presented are taken from the analytic sessions and the phobic situation itself is seldom described adequately. For this reason it is not possible to give precise accounts in terms of behavior theory of the development and treatment of the probias reported. But one or two general observations can be made.

We referred earlier in this paper to Bornstein's case of the girl who developed a phobia of lying down(2). From the point of view of behavior theory the following points are of importance. "Training in cleanliness was begun in the sixth month. The child was held over the pot at regular hours." Towards the end of the first year, the child's grandmother took over the toilet training and apparently imposed severe measures. After the age of one year the child wet herself on very few occasions. One of these occasions was the day before her mother's return from an illness, when she wet herself several times. "The members of the household thought it probable that when this happened they said to her 'Wait until your mother hears you have wet yourself again! She won't love you any more. She will go away again and won't want to come back.' "

Bornstein comments,

> We believe that she could not allow herself to lie down because she was afraid that when lying down or sleeping she would be unable to control the wish to defecate in bed . . . Moreover we know of an historical factor which had connected the motif 'incontinence' with the motif 'not sitting' : *After her illness with diarrhoea the child could no longer sit up.*

(original italics). Bornstein is referring here to the fact that when the child was 7-months-old she had an attack of diarrhoea which left her so weak that she could no longer sit alone.

From the point of view of behavior theory the development of the phobia can be accounted for in the following way : Because of her severe toilet training the stimulus to urinate or defecate had become associated with anxiety. The association of defecation with lying down (at the time of her illness) resulted in the act of lying down also producing the anxiety response. The child then attempted to avoid anxiety by sitting up all the time.

Concerning the child's recovery from the phobia, the following observation is noteworthy :

> The child on one occasion refused to resume even a sitting position in bed. As was usual she was left. She soiled herself, the bed was changed and the girl asked her mother to give her a hug which she was given. Then to the mother's astonishment the girl happily lay down in bed for the first time in five weeks.

It would seem unlikely that this one association of soiling with an accepting and affectionate response was sufficient to produce a recovery. Although we are not informed whether, after this "astonishing" result, the mother altered her attitude and behavior to her child we will assume that she used this experience in her future handling of the girl. If she continued to use affection and re-assurance to dampen the child's anxiety, such a procedure would almost certainly have brought about a reduction of the phobia.

In the case of Sandy's dog phobia(27) and Frankie's elevator phobia(3) we do not have sufficient information to give a convincing account of the development of the phobia. But we have already seen that in both cases the phobic objects were associated with fear producing stimuli. In the case of Sandy, we have the nightmare involving a dog and the therapist's warning that dogs bite. But one may be justified in asking why the child had a nightmare involving a dog

in the first place. In the case of Frankie we have the nurse's threats that she would call the elevator man to teach him not to disturb people.

Regarding Sandy's and Frankie's recovery from their phobias we again do not have sufficient information. But it is of interest that Sandy frequently encountered dogs when out walking with the therapist which would at least present an opportunity for the extinction of the fear response. Secondly Schnurmann writes that on one occasion Sandy played quite happily with a doll's pram, "I asked her whom she had covered with the blankets. She produced a dog. I said 'A doggie.' Sandy replied, 'No pussy cat.'" It is possible that further play with the toy dog would have produced some desensitization. Finally Sandy had played dogs with other children and the therapist and it is of interest that the phobia ended in the following way: "When on the way to the nursery school we met a dog who was on a lead. Sandy at first made a withdrawing movement, then she approached the dog hesitatingly. When another dog came into sight, Sandy walked directly towards him and barked." Sandy responded in other words in a manner learned while playing at being dogs.

Conclusions

Mention has been made of Mary Cover Jones's(20, 21) classic studies in which she describes her attempt to develop techniques for eliminating children's fears. The significance of this early work is only now becoming recognized. She gives an account of several methods of treatment. Four of these appear to be promising, practical and in accord with present-day learning theory. They are the methods of:

1. Direct conditioning.
2. Social imitation.
3. Systematic distraction and
4. Feeding responses.

The fruitfulness of the behavior theory approach to phobias is well demonstrated if we add to Jones' list the additional new methods which have been, or could be used in overcoming children's phobias.[2]

5. Systematic desensitization (Wolpe)
6. Assertive responses (Wolpe)
7. Relaxation responses (Wolpe)
8. "Pleasant" responses in the life situation—with drug enhancement (Wolpe)

In a suggestive article by Jersild and Holmes(17) further possible methods for treatment of children's fears are discussed. From their survey of parent's experiences in dealing with children's fears, Jersild and Holmes suggest these techniques (among others): Prompting the child to acquire skills which will enable him to cope with the feared situation; progressive contact with, and participation in, the feared situation; verbal explanation and reassurance; practical demonstration of fearlessness.

Some of these techniques are already employed by prevailing therapies without receiving explicit acknowledgement.

All these methods certainly provide therapists with a formidable armamentarium to begin with. What is now required is careful, thorough investigation of these methods and above all a major project to establish the degree and permanence of improvements which may be obtained by these techniques.

In the meantime, active therapists may consider conducting their own investigations of these methods when faced with children suffering from phobic conditions. Obviously the choice of the method will depend to a considerable extent on the nature of the phobia. It is worth remembering also that these methods are not mutually exclusive and it is probable that in many cases a combination of these techniques may offer the most promising approach.

[2] Naturally, many of these methods are equally applicable to the treatment of adults' phobias.

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A RE-EXAMINATION OF THE PHOBIC SYMPTOM AND OF SYMBOLISM IN PSYCHOPATHOLOGY

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In spite of some important exceptions (9, 10, 14, 15), the study of phobias has been neglected recently. And yet if a symptom should be the representative of psychiatric disorders no other one could be better selected. In fact phobia or fear may appropriately represent one of the most common states of man, who in spite of, or rather, because of, his advancement and understanding, has become so aware of the precariousness of his condition as to transform danger from something to be prevented to something to be always concerned with.

The reasons why phobias have been relatively neglected in the literature are two: first; whereas phobias were seen as constituting a syndrome in themselves (called phobic state or anxiety hysteria), recently they are more frequently recognized just as symptoms of a total psychoneurotic clinical picture (and much less frequently psychotic). For the last two decades the emphasis has been on studying total syndromes rather than isolated symptoms. The second reason is the fact that after Freud's classic interpretation of phobias (8), no important diverging or supplementary hypotheses have been advanced.

Although the present writer agrees that the study of the total syndrome is more important than the study of the individual symptoms, he feels that a reexamination or reassessment of established conceptions is from time to time warranted.

THE PSYCHOLOGICAL STRUCTURE OF PHOBIAS

Freud's interpretation of phobia consists in seeing this symptom as a displacement (8). For instance, little Hans is actually afraid of his father, but in his neurosis the fear is displaced to horses. According to Freud the displacement hides a sexual threat and thus becomes symbolic of what it replaces. For instance, fear of being bitten by a horse replaces fear of castration by the hands of father.

According to the present writer, the displacement is not necessarily from one object (father) to another (horse). More than a displacement a concretization takes place. The patient may be in fearful expectancy of vague, intangible threats, which may be difficult to define or which he does not want to define or recognize: hostility from father, possibility of abandonment by mother, atmosphere of hate and resentment in the household, *etc.*

In several phobic patients the psychiatrist may easily recognize the concretization of a more general anxiety situation: fear of sexual relations hides a bigger fear in sustaining loving relationships; fear to travel hides a bigger fear of making excursions into life; fear of many little things generally hides a general state of insecurity. Odier (15), in a certain way understood this phenomenon when he wrote that "Behind the phobogenic object hides a concept, an idea, a vague intuition."

In the writer's opinion what happens in phobias is the expression of a general principle of psychopathology, *viz.*: that which cannot be sustained at an abstract level because it is too anxiety provoking, or for other reasons, is concretized. This concretization of concepts and idea-feelings is not merely the expression of a reduction to a concrete level, as Goldstein (11, 12) has described especially in organic cases, but an active process of concretization, that is, an active changing of the abstract into the concrete. For instance, before the onset of a psychosis a patient has the vague impression or feeling that the whole world is hostile toward him. After the onset of the psychosis the vague feeling becomes transformed into a concrete delusion: "They are against him" (3). Concretization reaches the point of perceptualization in hallucinations (1). For example, before the psychotic outbreak the patient had a self-effacing attitude, a pervading feeling of inadequacy and unworthiness. After the onset of the psychosis he hears voices accusing him of being a failure, a homosexual, a spy, *etc.*; that is,

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at a perceptual level he hears expressions of his own undesirability.

Phobias share with many other psychiatric symptoms the phenomenon of concretization. However, they have characteristics of their own, which have to be re-examined and reinterpreted for a more complete understanding of the phenomenon. These characteristics appear more evident if contrasted with those of delusions:

1. Whereas in delusions the threatening objects are other human beings (the persecutors), in phobias there is a dehumanization of the source of fear. For instance, bridges, cars, high buildings are frequently the phobogenic "objects." Characteristic enough is the fact that animals (horses, dogs, cats, insects) are often the phobogenic objects, but not human animals. Some human beings such as dentists, policemen, monks, may become phobogenic not because they are human but because of their role or the uniform they wear. In other words, the phobogenic object is either their role or their uniform.

2. Although the phobic patient attributes great power to the phobogenic object, he concentrates his attention on himself, that is, on the effect of the fear on himself. Whereas the deluded patient is mostly concerned with the bad qualities of the persecutor, the phobic is mostly concerned with the disturbance he will undergo if he is exposed to the danger.

3. The phobic patient retains some possibility of action within the framework of his symptomatology: he may escape the danger by avoiding the phobogenic object. In other words, it is up to him to avoid the fear-provoking situation. He is not a passive or helpless agent of persecutors, as the deluded patient.

4. Contrary to the deluded patient the phobic retains the capacity to test reality. He understands that his fear is absurd and not syntonic with the rest of his psychological functions. As a matter of fact a great part of his conflict consists in his being obligated to react in a way that he himself considers absurd.

Can these characteristics of phobias be interrelated and explained? An attempt will be made toward a pathogenetic interrelation of the various aspects of the symptom, but an etiological interpretation is beyond the purposes of this paper.

The fundamental mechanism in phobias is introjection, not projection. In other words, the phobogenic object is not perceived as an entity in itself but as a disturber of the organism. As I have described more extensively in other works(5), a primitive form of perception consists in experiencing the external object only as a disturber of the organism. The perception does not mirror reality. It is an inner status of disequilibrium that the external stimulus produces. What counts is the alteration of the inner status of the organism more than the mirroring of the external object(4). In phobias this primitive type of perception occurs. The phobogenic object is introjected as a disturber of the organism, not *per se*. Obviously an unrealistic quality is *projected* to the phobogenic object, but the introjection of the alleged emotional disturbance is the main characteristic and reaches exaggerated proportions.

In all forms of altered introjections or of increased emotional disturbance (for instance in depressions) appreciation of external reality is not distorted or only to a minimal degree: only the inner status is. The phobic patient retains a grasp on external reality: on the other hand the deluded patient does not. The latter does not introject pathologically; he projects pathologically. Pathologic projection requires a transformation in cognition; the focus is on the cognitive functions not only of the patient, but also of the external world. But the only cognitive powers in the external world are other human beings. In phobias no cognition of other people is taken into account. The phobogenic object is not considered as a malevolent being who plots the destruction of the patient; it is seen only as a disturbing agent, not as a willed object.

It may be useful at this point to use Buber's terminology(6). In the phobic patient there is an I-It relationship between the patient and the phobogenic source; an I-Thou relationship in the paranoid. In both cases the relationship is distorted, and seen by the patient as a one-way relationship, that is from the external object to the patient and not from the patient to the external object. As I had occasion to discuss

elsewhere(2), the pathological I-Thou relationship of the deluded is a more primitive one than the I-It pathologic relationship.

Human beings do not have merely an I-Thou relationship, but also an I-It relationship; that is, a relationship between the person and the non-human world. Many neurotic persons who have difficulties in interpersonal relations try to change the I-Thou relationship into an I-It relationship. They try to treat people as things; they depersonalize them. For instance, people become machines, sexual relations only a biological function, human relations become scientific experiments, and so on. Even the therapist becomes a therapeutic machine which renders a service. In the phobic patient the I-It relationship becomes accentuated. As I have described elsewhere (2), in the deluded patient this neurotic mechanism is absent. The patient cannot translate the personal into the impersonal. As a matter of fact one sees the opposite process: the impersonal tends to be personalized. Whatever of significance happens is never attributed to chance or to physical events (or to that particular chance which is bad luck). Almost everything is anthropomorphized and seen as a consequence of a personal will. One could object that in phobias too there is a certain kind of animism inasmuch as a special power is attributed to special situations and to inanimate things. Furthermore, animals, that is animated entities, are ofter phobogenic objects. This is true, but to a much more limited extent than in the psychotic patient. In phobias the phobogenic object acquires a special power only as a disturber of the organism, not as a plotting agent. Only human beings can be plotting agents.

The fact that the phobogenic object is an "It" permits the patient to retain a certain active role, that of mobilizing his defenses. In this respect the phobic differs from the psychotic and is similar to other psychoneurotic patients. The phobic defends himself with avoidance (of the danger); the hysteric with bodily impairment (so that he will not be able to face danger), the compulsive with a ritual (which, like magic, will protect him from danger).

SYMBOLIZATION

The study of phobias may help us to reexamine the general problem of symbolism in psychopathology, as phobias stand out among the most typical examples.

Since the beginning of the psychoanalytic era psychopathological symbolism has been intensely studied, but has not yet been correlated with the general symbolic process of the human mind, with which neurologists as well as philosophers and semanticists have been concerned. In this paper only the salient features of the general symbolic process will be reviewed in order to show later how they differ in pathological symbolism.

As Cassirer(7), Langer(13), and others have mentioned, a symbol is something which stands for something else. A most primitive type of symbol is the signal, which is a clue for something else which, however, is implied or present, although not obviously so. For instance, a certain rash is, for the physician, the signal of measles in the child, a certain odor is for the cat the signal that a mouse is around.

A real symbol, however, is something that stands or may stand for something which is absent. For instance, the name John may stand for John when John is absent. Language is a community of symbols. At first a symbol may stand for an external object: for example, the word "mother" stands for the child's mother, in the child's mind, but eventually for every mother. That is, the word will not denote only one object, one mother, but will refer to the whole category of females who beget children. Furthermore the symbol mother is not only communicated to others, but shared with others. That is, all who hear it know the denoting or conceptual meaning of the word "mother."

With the evolution of culture, symbols are created which stand for higher and higher categories. For instance, numbers are symbols which may stand for anything (the symbol 3 may stand for three apples, three books, three men, *etc.*). Algebraic symbols may stand for every number. Higher symbols are obtained by abstracting parts from lower classes. The new symbol will represent the new class formed by all the members possessing that abstracted part. For

instance, from the symbol "animal" we may abstract the symbol "animal with vertebral column," constituting thus the class of vertebrates. From "vertebrate" we may abstract "mammals" which are those vertebrates which nourish their young with maternal milk, and so on. The members of the higher class acquire some qualities without losing the qualities of the lower class.

The above remarks are insufficient to encompass the complex phenomenon of symbolism but perhaps sufficient to throw some light on the differences between normal and pathological symbolization.

Let us take again as a paradigm the case of Freud's patient, little Hans :

1. The horse as a phobogenic object, at a conscious level is not a symbol, but a signal. In other words, it must be present in order to evoke fear. It is true that the memory of the horse may be frightening to Hans, but this case is already a complication of the situation : the memory is a symbol of the signal "horse."

2. The phobogenic situation is a very concrete situation, and cannot be abstracted from its actuality.

3. The horse as a phobogenic agent is not a symbol which can be shared with others. Hans can communicate his fear to others, but the fear will not be shared by others.

4. Fear of the horse replaces at a conscious level many other fears, which are still present, although not acknowledged. Fear of interpersonal relations may coexist with the fear of the horse, although the patient concentrates on the horse and not on the interpersonal relations.

5. With the development of the illness, a phobia, like the fear of horses, may stand for an increasing number of events and interpersonal situations which evoke fear or anxiety. Larger classes of anxiety or fear-provoking situations or objects can be constructed, but these classes cannot be abstracted from lower ones, as the class of mammals was abstracted from the class of vertebrates. The larger classes do not retain the properties of the smaller classes. Finally we can see that only one element is common to these phobogenic classes : the phobogenic quality. They are thus very arbitrary classes, non-Aristotelian and abnormal classes.

6. This common phobogenic quality, on which the abnormal class is built, at the level of consciousness is not shared by the members of the class. As a matter of fact the patient represses more or less the phobogenic qualities of all the members of the class, except the one which appears in the symptom. In other words, the patient becomes unaware of his anxiety about interpersonal relations, and becomes aware only of the fear of horses. Thus the abnormal class exists only in a state of unconsciousness.

It is important to distinguish these two categories of symbols, which the human mind is capable of conceiving. To confuse them is not only poor semantics ; it means to remain oblivious to the two arrows of human symbolism : the arrow directed toward higher constructs and that directed toward lower constructs. Whereas the normal symbol requires the property of entities which are not only absent but in some cases even impossible to see or confirm, like the infinite decimal and the imaginary numbers, the pathological symbol (called by me paleosymbol)(1) tends to *reduce to one property* the many characteristics of arbitrary classes. It is not leading to higher constructs and is not interpersonal. Its only constructive use consists in being a pathological defense for the patient, who without this symptom would be even more incapable of coping with more general anxiety-provoking situations.

Summary

Phobias are seen as expression of the general psychopathologic phenomenon of concretization. The fears are concrete representations of more abstract anxiety-provoking situations and relationships.

Phobias have certain characteristics, like dehumanization of the phobogenic object, alteration of the emotional status, retention of active role and of reality test, which can be correlated.

Symbolism in psychopathology presents some characteristics, like concentration on signals and formation of abritrary classes, which differ from those of normal symbolism.

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THE CHAIN OF CHRONICITY [1]

ROBERT SOMMER, PH.D., AND GWYNETH WITNEY, B.Sc.[2]

Considering its importance in mental hospital psychiatry, there has been very little study of the process of becoming chronic. Most authors who place patients into the categories "newly admitted" and "chronic" make no attempt to show when and how a new patient becomes chronic. The scope of the problem can be seen in the fact that 80% of the patients in public mental hospitals are considered chronic by the criterion of having been hospitalized two years or more(1, 2). Malzburg(5), Brown (1), and Johnson(7) have all emphasized that this two-year mark represents a turning point in the patient's hospital career, for after this his chances for discharge are very slim. A solution to the problem of the chronic patient would be of immense practical value to hospital administrators since each chronic patient is likely to occupy a bed for 20, 30, or even 40 years. It would not be simply a matter of reducing the average length of stay for newly admitted patients from 12 months to 10 months, but rather of eliminating a life sentence given to perhaps one in 20 newly-admitted patients. In England a prisoner handed a life sentence can expect to serve about 8 years. He is far luckier in this respect than a few of the admission ward patients who are transferred to a continued treatment ward.

Chronicity can be viewed as a sequence of connected events, each of which must occur before the patient becomes chronic. This suggests that chronicity can be reduced or eliminated if any link in the chain is broken. In Figure I, the left-hand column represents the chain of chronicity. Some examples should illustrate the way in which occurrence of any one of these right-hand alternatives can keep a patient from becoming chronic. If his peculiar behavior were never noticed by family or friends, then he would not be defined as mentally ill. However, if other people noticed his peculiar behavior but were willing to tolerate it, he would not be moved to the fourth link, referral to a psychiatric clinic. Even at this point he could still be treated on an outpatient basis. Finally, if all patients admitted to mental hospitals remained on the admission wards and were discharged after a brief time, we would be creating no new chronic hospital patients. The only chronic patients would be the residue from previous cohorts, or, in the words of Morgan and Johnson(7), "the psychiatric failures from previous generations of entering patients."

Community psychiatrists have concentrated on the beginning links of the chain, especially the early recognition of mental illness and its prompt treatment on an outpatient basis. The mental hygiene movement has been active in emphasizing such things as the need for guidance counselors in schools and psychiatric training for clergymen. There are also many new and not so new alternatives to committal to a mental hospital, and here can be included the day hospital, night hospital, psychiatric wing in the general hospital, *etc.* All these approaches aim to eliminate chronicity by breaking the beginning links. Psychiatrists and social scientists employed in mental hospitals are working at the other end of the chain. They are coping with such problems as the maintenance of the patient's contact with his family, the preservation of his social values and skills, *etc.* In our own research at this hospital we have found that the longer a patient remains, the fewer visits and letters he receives, the less he is in touch with developments on the outside, and the more his values differ from those of people in the community(8, 9, 10). Passivity, dependence, and a blind acceptance of authority are just a few of the symptoms of prolonged care in what Goffman(3) calls "the total institutions." As mental hospital psychiatrists and administrators have found, it requires a lot of determined effort and research to counteract the effects of this dis-

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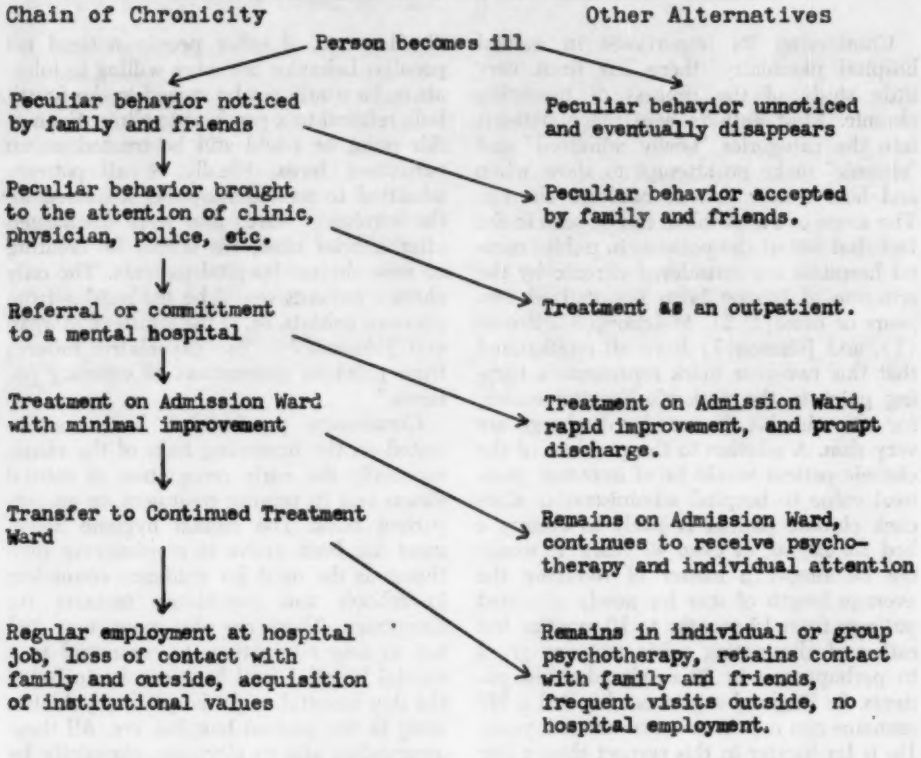
FIGURE 1

The Process of Becoming Chronic


Chain of Chronicity
Other Alternatives
Person becomes ill
Peculiar behavior noticed by family and friends
Peculiar behavior unnoticed and eventually disappears
Peculiar behavior brought to the attention of clinic, physician, police, etc.
Peculiar behavior accepted by family and friends.
Referral or committment to a mental hospital
Treatment as an outpatient.
Treatment on Admission Ward with minimal improvement
Treatment on Admission Ward, rapid improvement, and prompt discharge.
Transfer to Continued Treatment Ward
Remains on Admission Ward, continues to receive psychotherapy and individual attention
Regular employment at hospital job, loss of contact with family and outside, acquisition of institutional values
Remains in individual or group psychotherapy, retains contact with family and friends, frequent visits outside, no hospital employment.

culturation. Resocialization aims at getting withdrawn and regressed patients to participate in activities. Reacculturation introduces the patient to the values and attitudes of the world outside; education and vocational training can teach the patient skills that will allow him to compete effectively on the labor market; family and community ties can be re-established by urging families to visit more frequently. These measures all aim to break the end links of the chain, the total institutionalization of the patient.

There has been very little investigation of the fifth link of the chain, transfer from the admission ward to continued treatment ward. Hospital psychiatrists and social scientists have been so busy remotivating and reacculturating chronic patients and applying new therapies to admission ward patients that transfer from the admission ward to a continued treatment ward has been a relatively neglected process. Perhaps one reason for this is the guilt engendered whenever a patient "fails" his course on the admission ward and must be transferred.

Transfer from the admission ward has more than symbolic significance to staff and patients. Steiner(12), in one of the few studies of inter-ward transfer, found that patients had fairly clear ideas as to which wards were better and worse than other wards, and that when a patient was transferred to a ward that he defined as "better," his hospital adjustment tended to improve, while if he were transferred to a ward that he regarded as "worse" than his previous ward, his hospital adjustment deteriorated. It is also true that staff on the admission ward expect that patients will go

home in a few months, while continued treatment ward staff expect that patients will remain in hospital at least for the next few months. Nurses usually remain on the admission ward longer than patients, while patients on the continued treatment wards usually have longer tenure than the nurses. Futhermore, there are objective and easily observed differences between the admission wards and continued treatment wards. These have been documented in studies at a large number of hospitals, including this one. Compared with admission wards, continued treatment wards have :

1. Lower discharge rate.
2. Less turnover among the patient population.
3. Fewer visits from relatives and friends.
4. Fewer letters both to and from patients.
5. Less contact between patients and psychiatrists or social workers.
6. Emphasis on group rather than individual activities.
7. More patients holding full and part-time hospital jobs.
8. Different kinds of patients. Apart from the geriatric ward, almost all patients on the continued wards are schizophrenic. On the admission ward where there are a large number of alcoholics, manic-depressives, and neurotics, the schizophrenic patients are in a minority.
9. Fewer friendships between patients. This has been shown by numerous studies of friendship patterns at this and other hospitals(14).
10. Less favorable staff-patient ratios and usually poorer physical surroundings. Continued treatment wards usually contain more patients and are more crowded than admission wards, and the patients are more poorly dressed.

All these factors indicate that transfer is much more than a symbolic or administrative act. It not only marks the patient as a "failure," in many cases it insures that he becomes one. Merton(6) terms this kind of situation a "self fulfilling prophecy." This can include rejection of the patient by the staff coupled with guilt at their inability to help him, and loss of hope by the patient accompanied by acceptance of a passive institutional role.

In this paper we shall be concerned with the type of patient who is transferred from admission wards to continued treatment wards, the reasons for transfer listed in the patient's file, the reasons for transfer explained to the patient by the staff, and the patient's interpretation of the transfer.

METHOD

Interviews were held with all those patients who had been transferred to two continued treatment wards during the past two years. These two wards, one male and one female, receive most of the transfers from the admission wards in this 1500-bed mental hospital except for older and physically infirm patients. Excluding those unable to be interviewed, away on leave, *etc.*, 46 patients were interviewed. From the hospital files we found each patient's age, diagnosis, length of stay on the admission ward prior to transfer, number of previous admissions, and reason for transfer. Interviews took place on the patient's ward and concerned his views toward his transfer. Each patient was asked the following questions :

1. Did you know why you were transferred from the admission ward to this ward ?
2. Were you told beforehand that you were going to be transferred ?
3. Who told you ?
4. Were you told the reason for your transfer ?
5. What did this transfer of wards mean to you ?

A few of the patients were unwilling or unable to answer some of the items, so the total number of responses does not always reach 46. Generally speaking, the patients were cooperative and willing to discuss their transfers. However, since in some cases transfer had occurred a year or more before the interview, their opinions were rather hazy.

RESULTS

Diagnostically, the patients who were transferred were a fairly homogeneous group with more than 85% having a diagnosis of schizophrenia. About half of these were of the simple undifferentiated variety, although there were quite a few paranoids

included. Most of the patients were in their late twenties or early thirties, but this was largely due to the particular wards we studied since all older or physically infirm patients were transferred elsewhere. The preponderance of young adults underlines the seriousness of the problem of the chronic patient. These individuals have life expectancies of 30 or 40 additional years and if they are allowed to become chronic, they can occupy a hospital bed that could serve perhaps 60 short-stay patients.

The next question was how long these patients spent on the admission ward before being transferred. This is essentially an administrative matter and is supposed to depend upon the condition of each individual patient. The first difference is between those patients who return from parole, boarding-out program, or were transferred from other institutions. These patients are all admitted to the admission ward where, in theory at least, they can stay as long as any other patient. Yet, these 8 patients remained on the admission ward an average of only 3 days compared with 54 days for patients who were admitted directly from the community. There is also a slight relationship between length of stay on the admission ward and number of previous admissions. Excluding those who returned from parole or boarding-out, patients with no previous admissions averaged 76 days on the admission ward, patients with one previous admission averaged 55 days, while patients with two or more admissions averaged 44 days.

According to the hospital files, the major reason for transfer to a continued treatment ward was that the admission ward had proven too disturbing to the patient and that he would benefit from a more stable environment. Other major reasons were that there was nothing more to offer a patient on the admission ward and that he would probably require long hospitalization. Overcrowding on the admission ward was listed as the reason in only one transfer note. In some cases there were specific recommendations for a treatment regime on the continued treatment ward. Four patients were recommended for group therapy, while two patients were recommended as "ward helpers."

The patients had very different interpretations of the reason for transfer. Fully half did not know why they were transferred, and the next largest group believed that the reason was overcrowding on the admission ward. A comparison between the reasons for transfer given in the patient's hospital file with the patient's account of the reason for his transfer is presented in Table I.

Half the patients stated that they had not been informed in advance about transfer, while 8 others said that they were informed only on the day of transfer. This compares with 13 patients who stated that they had been informed about the transfer and 6 who could not remember whether they had been informed or not. The person most likely to have told the patient was the supervisor, while a ward nurse was mentioned next most frequently. Only 4 patients reported being told about the transfer by their doctor. The meaning of the transfer varied from patient to patient. Some appreciated the comparative calm and quiet of

TABLE 1

Reason for Transfer According to Patient and Hospital File

REASON FOR TRANSFER	ACCORDING TO: HOSPITAL FILE	PATIENT'S ACCOUNT
Too Stressful on Admission Ward	15	1
Nothing More to Offer on Admission Ward	9	1
Will Probably Require Long Hospitalization	9	2
Previously on Continued Treatment Ward	7	2
Will Benefit from Group Therapy	4	4
Will Benefit from Helping Patients on Continued Treatment Ward	2	1
Overcrowded on Admission Ward	1	10
Requested Transfer	0	2
Miscellaneous	0	5
No Reason Given	7	16

the continued treatment ward, while others missed the activity and stimulation of the admission ward. The majority accepted transfer as another manifestation of the mysterious nature of administrative practice. For example, when asked how he felt about the move, one patient replied, "I didn't really know what to think about the transfer so I did just as the nurses said. I didn't want to start arguing because they seemed to know what's best for a person." Another stated, "I thought it was an order as far as I was concerned. We haven't the right to vote in here, have we? And if we haven't the right to vote, they can't have much concern for our opinions. Maybe some of them got together and decided." Another patient replied, "I don't understand the hospital well enough for it to have much meaning." A patient who preferred the admission ward stated, "I don't like this ward, I wanted to stay on the admission ward because it has better functions. I think they are on a higher scale there. I like the admission ward better because they have the dining room right on the ward and they are not so crowded. This ward is overcrowded." On the other hand, a patient who preferred the continued treatment ward stated, "Transfer means that I have more freedom in going outside. The patients are more incorporated here than on the admission ward." (More incorporated?) "No one bothers nobody." (Do you like this?) "Yes." Others objected to the transfer simply because they preferred to continue in a situation they found comfortable. "I don't like to change, to move around. Stay here—stay there. It's no good to move around. I don't like it. I'd rather stay in one place." Another said, "The transfer didn't mean very much to me. It's almost the same here as over there, but I would rather have stayed over there, I had got used to it."

We also felt that it would be useful to supplement our interviews with an analysis of the social-psychological characteristics of 50 patients who were transferred from the admission ward and 50 patients who were discharged or paroled from the hospital. We followed the hospital career of those patients who were on the admission wards during November, 1959 and noted whether the patient had been transferred to a long-stay ward or discharged. We then compared the social psychological characteristics of 50 patients who had been discharged with 50 who had been transferred. In both cases the samples constituted the first 50 patients on the list.

From a standpoint of diagnosis, patients who were classified as simple, undifferentiated, or catatonic schizophrenics were more likely to be transferred than paranoid schizophrenics. In fact twice as many simple, undifferentiated or catatonic schizophrenics were transferred as paranoid schizophrenics, while twice as many paranoid schizophrenics were discharged as any other kind of schizophrenic.

It also turned out that, generally speaking, patients who were transferred spent *less* time on the admission ward than patients who were eventually discharged. There were many exceptions to this of course, but the median length of stay for those patients who were transferred was 64 days while the median length of time on the admission ward by patients who were eventually discharged was 80 days. If a shorter time period is used, the difference is even more intriguing. Within the first 30 days of a patient's stay in hospital, only 4 patients were discharged but 14 were transferred. The differences are not large since there is a tremendous range of time spent on the admission ward but they are sufficient to cast doubt on the idea that a patient is only transferred after all hope of discharge is abandoned. Adherence of this view would maintain that patients are kept on the admission ward as long as possible and only transferred when the prospects for discharge become slight. This view is incorrect since a majority of those patients who were transferred never even remained on the admission ward as long as the median time required for discharge.

In terms of marital status, the data show that a majority of patients who were discharged were married, while the majority of those who were transferred were single. This difference is significant at the .05 level by Chi square Test and supports a similar finding by Morgan and Johnson(7). The data also show that three-quarters of the men in the sample were single, while three-quarters of the women in the sample were

married. This sex difference does not vitiate the preceding difference between transferred and discharged patients, since there was an equal number of men and women in each group.

There was no difference in age between patients who were discharged and those who were transferred. The only suggestive item was that of the 11 patients over 60 in the sample, 9 were transferred and only 2 were discharged.

There was also a trend for the length of time that a patient spent on the admission ward before transfer to vary inversely with his number of previous admissions. That is, the more previous admissions a patient had to a mental hospital, the less time he spent on the admission ward before he was transferred to a long-stay ward. However the trend is much less clear with this sample, although patients with no previous admissions or one previous admission remained on the admission ward twice as long as patients with 4 or more previous admissions.

Discussion

Our previous research into the relationship between length of hospitalization and letter-writing, social attitudes and skills has been more concerned with the effects of chronicity than with its causes. However, it is apparent that spending a specific number of years in a total institution does not automatically produce disculturation since there are such people as Nathan Leopold and the Birdman of Alcatraz who spent more than 30 years behind bars without losing their former social values. There are also the well-documented cases of prisoners-of-war who successfully resisted intensive "brainwashing" campaigns. Persons of this sort who are able to avoid being desocialized or discultured even under extreme conditions do not require much analysis except from the standpoint of individual psychology. It is the vast majority of inmates who are either unable or unwilling to resist succumbing to the prison culture or the mores of the hospital staff who can reap the most benefit from administrative remedies to chronicity.

On a more practical level, many of the transfer notes in the patient's file contained recommendations for specific modes of treatment. For example, there was a suggestion that one patient become a ward helper, while another should be given a job in the sewing room. It is difficult to say to what extent these recommendations were put into force when the patient arrived on his new ward. We have some evidence from other work that the hospital files are not used very often, especially on the long-stay wards. It seems important that continuity of treatment be maintained throughout the patient's entire hospital career. For the patients in the present study, this was probably more easily achieved on the male continued treatment ward where the patient had the same doctor as he did on the admission ward than on the female continued treatment ward where the patient changed doctors when she changed wards. This, of course, was an administrative matter and a function of the number of psychiatrists available at the time. Yet it does illustrate the need for continuity of treatment, not only upon entering hospital and after discharge but also within the hospital structure.

Even if measures are taken to reduce the number of chronic patients, there will still be chronic *schizophrenics* living in the community. The similarity between the terms is unfortunate since these are really two different problems. A chronic schizophrenic is a mentally ill person whose illness and behavior have reached a stable level, while the chronic patient is a person unable to manage outside of an institution. Many chronic schizophrenics are able to live marginal existences outside of hospital, especially in rural areas or if they have relatives willing to care for them. They may never become hospital *patients*. An especially good example of this was the paranoid schizophrenic described by Trevelyan(13) who lived for 80 years as a hermit. The chronic *patient*, on the other hand, may no longer possess the illness that originally brought him into hospital. His difficulty may be that he lacks the funds or skills to maintain an independent existence (*e.g.*, an indigent older person or a low-grade mental defective) or simply that he has no other place to go. The relevance of the preceding discussion to the problem of the chronic schizophrenic is that he is very likely to

become a chronic patient if he ever enters hospital. We have often observed how older patients, even those admitted for the first time, who are given the diagnosis of chronic schizophrenia are rapidly transferred from the admission ward. Instances of this sort help explain the tremendous differences in the length of time that various patients spend on the admission ward before transfer. One patient in our sample spent 554 days on the admission ward before transfer, compared with 28 days spent by another patient. Although chronically ill persons will still be admitted to mental hospitals and psychiatric clinics, it is important to keep them from becoming chronic *patients*.

SUMMARY

The goal of the study was to learn something of the process by which a newly-admitted patient becomes chronic. Interviews were held with 46 patients who had been transferred from the admission ward to a long-stay ward. Each patient was asked whether he knew the reasons for transfer, the person who told him, and what the transfer meant to him. The ward files of these patients were also examined to learn the official reason for the patient's transfer. Finally a comparison was made of the social-psychological characteristics of 50 patients who had been discharged from the admission ward and 50 patients who had been transferred to long-stay wards. It was found that most of the patients who were transferred rather than discharged were simple, catatonic, or undifferentiated schizophrenics. Patients who were transferred also tended to be unmarried and on the average spent *less* time on the admission ward than patients who were eventually discharged. The implications of these findings for the prevention of chronicity among mental patients were discussed.

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ECOLOGICAL FACTORS IN HUMAN MALADAPTATION

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I.

The aim of this paper is to discuss the pathological effects of the human ecological situation interpreted as the relation of individuals to cultures. Individual symptoms in social conditioning are to be interpreted as integrative level phenomena. The largest part of the external world, the astronomical domain of the macrocosm, for instance, exists at integrative levels lower than the human. There may be life on other planets, but there are more planets than are inhabited, to say nothing of uninhabitable stars, vast clouds of hydrogen gas. Even on our own planet, while exploration extends within the crust and into the ionosphere, life can be sustained for any length of time and in any numbers only on the surface. But at the human level the non-human areas are represented symbolically and so play a role *in absentia*. We shall consider further what happens to the representation of absent objects.

We begin with the prospect of the external world from the perspective of the human individual. It is a vast panorama of shuffled up materials, statistically more profuse at lower integrative levels. And this is true even for that small segment of the environment which is the available environment or mesocosm. Man lives in the "mesocosm," a middle world between two other worlds which he can explore but in which he cannot live: the world of the very small: the microcosm, and the world of the very large: the macrocosm. Within the mesocosm a bewildering array of stimuli furnish the contents of the continual input to which the individual is subjected. The efficacy of positive responses can only follow the learning of "the insignificance of all irrelevant stimuli"(8).

The environment extends, then, beyond the reach of the individual; but within his reach it contains the ingredients to satisfy tissue needs in varying degrees. We shall not attempt here to deal with all of these(13). His most pressing need, the need for survival, is met with the proper exercise of the avoidance response, and along with this no doubt go all varieties of aversion: fear, aggression, and flight. But with the needs for feeding and breeding, tension arises. Conventional types of thanatophobia are obscured by the more pressing search for food and mate, which are, respectively, less common than the ground he must have under his feet and the air he must breathe into his lungs. Muscle tonus and the oxygen supply take care of themselves; but hunger and sex cravings require more concentration. The constant foraging and courting constitute pressures, and when children are the outcome of the latter, it only increases the pressure of the former.

Thus the individual is driven back to the consideration of how these needs can be anticipated and perhaps met with a long-term supply. To escape the tyranny of the immediate environment, it is necessary to discover how to anticipate future tissue needs and to store up satisfactions to meet them. Communication with others having the same problems becomes urgent, for the successful outcome of such discovery requires the execution of tasks which do not lie within the range of the powers of the individual: hunting large animals, planting, protecting and harvesting vast crops. The entire enterprise, planned for the future, is a way of dealing with absent objects(7) in the general terms of a colloquial language. Inevitably, the relationship between these need-satisfactions is discerned, and curiosity aroused. The individual takes off in search of facts and causes.

It is important to notice, however, that a drastic reversal has taken place, one so subtle as to go almost unnoticed and yet so far-reaching as to constitute another stage in biological evolution. The proposition that *All inquiries are conducted for the sake of maintaining existence,* has been converted to the proposition that *All existence is maintained for the sake of conducting inquiries.*

Let us consider some of the consequences of the conversion. In the first place, we are

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of course talking about living propositions, propositions as exemplified in practice, not about the natural history of human thoughts. Men once went where their curiosity led them for the purpose of survival; now they endeavor to survive in order to go where their curiosity leads them. The turn has been called not by the recognition of it in discourse but by the events themselves.

In the second place, such a reversal plays havoc with the drives toward the satisfaction of such tissue needs. The brain once occupied a subordinate role, being subservient to stomach and gonads. Now stomach and gonads function in order that there shall be a continuity of activity for the brain. But there is a further dislocation; for bits of the environment are internalized by the stomach and gonads, but the larger environment is contacted by the brain.

Evolutionary development is inverse to morphological dependence(4). The higher centers, such as the frontal lobes, were late arrivals on the phylogenetic scene; but on the other hand, the brain depends upon the other organs for its survival, and within the brain the higher centers depend upon the lower. For instance, circulation throughout the brain depends upon the proper blood pressure; and a continual fall in the blood sugar would produce at first loss of consciousness (with involvement of the frontal lobes), next convulsions (the cerebellum) and finally respiration difficulties (the medulla) and death.

Finally, due to the external nature of the aim of inquiry, material objects are altered in the course of it. Inquiry involves analysis, but it also leads to synthesis: social groups are formed and their organization established, tools are designed and techniques devised, and both are copied, and structures are erected and inherited. The accumulation achievement replaces the continuity of conditions. In place of the mere repetition of behavior by the successive generations, there is a construction of culture.

As for the individual, the knowledge of what exists now becomes the object of his search. He has turned into the creature who survives in order to inquire, erecting quasi-permanent answers into institutions, social relations operating, so to speak, in a neurological setting. For now the dependence of his organism upon the environment can be analyzed into one of dependence of the balance between homeostasis and the brain stem reticular activity. He bears the scars of his experience as collections of engrams, organized into explanatory beliefs: retention schemata both private and public. Thus equipped, he supplements the neurological homeostasis with a cultural homeostasis extended to include material objects (3). Such objects usually have the character of artifacts, because altered through human agency. His encounter with the environment in search of tissue-need satisfactions has resulted in an equilibrium between the retention schemata and the civilized external world. The continual interchange has been widely recognized; for it is acknowledged that "the cerebral instrument breaks down with zero input"(14) but on the other hand breaks down also when it is no longer able to sustain contradictions without diremption. It is the latter variety we have largely to deal with in psychopathology. Being human means sustaining private conflicts, and being social means sustaining public conflicts (as within and between the retention schemata). The neurotic is threatened by diremption and the psychotic has succumbed to it.

II.

Technological cultures, as products of the attempt to solve the long-term supply problem necessary for survival, themselves raise survival problems by bringing into play stresses of a peculiar type. In simpler cultures, in our own culture, too, in fact as late as the early 19th century, the individual was constantly subjected to external stresses and internal strains. Inter-personal relations, customs, institutions, with their conflicts and struggles, always exist. But the external stresses were limited to social struggles and the internal to the usual fear of death. In the complex cultures brought about more lately by the combination of the applications of science and industrial technology, a cultural homeostasis becomes more difficult to achieve and maintain. There are, of course, many psychoses to which youth is susceptible, such as hebephrenic schizophrenia and the psychopathic personality. But the aged are more susceptible, and in

1960 in the United States it was true that "one out of every three beds in public mental hospitals is occupied by a person 65 or older"(9). Rapid social change erodes the ground on which such a homeostasis could rest.

But there are worse difficulties. The chief feature of the scientifico-industrial culture which technology has developed is its abstractness. Forays into the microcosm and macrocosm have been successful. Men have returned with their scientific spoils, and the result is to change the character of the mesocosm, which now contains artifactual inhabitants seldom understood by nonspecialists, with their effects which are less understood still. The average individual lives for the first time in a world populated with material objects and procedures he does not understand and is perhaps incapable of grasping. He drives a car but does not fully understand the principle of the internal combustion engine; he operates a television set but does not comprehend the principle of the vacuum tube; he engages in business but does not understand the modern complexities of banking; he ingests vitamin capsules or antibiotics without the slightest glimmer of how they were constructed or of what they do. He is both benefactor and recipient of inquiries predicated on the search for a solution to the long-term supply of basic tissue-needs conducted at the level of the inexhaustible tissue-need of inquiry, and yet he remains in ignorance. And at this level he is expected to adjust. The scientifico-industrial culture like all other cultures, resulted from human behavior; but now the capital city, which is one result, itself provides the new conditions to which it becomes necessary for men once again to adapt. This time they have provided themselves with the stimuli as well as the responses. They have invented their own environment.

Only, as it turns out, they have done so without anticipating and estimating the prospects and costs of adjustment. The mesocosm is for the first time a world of their own devising yet it now develops that they did not figure it closely enough. The immediate environment is an altogether artificial environment. They have made themselves a world in which to live without considering just what it would mean to live in it. If it is true that the dependence of the organism upon its environment extends all the way from simple cell-division and the acid-alkalinity balance to the contents of excretions and the metabolic interchange, then what adjustments in body structure will be required for survival in the new social world? To live in the mesocosm now means to have all the stimulation of the receptors coming from the cultural environment. The ears are assailed by man-made sounds, from street noises to jazz. Few are able to escape from the roar of the traffic of some city. The eyes are continually in contact with artifacts. What with the skyscrapers, the obscuring city lights by night and the smog by day, the sky is hardly ever visible, and there is no incentive to view it. The nose is assailed by odors artificially produced, from the smell of asphalt and inhabited interiors to that of perfumes. Everything except artifacts is out of reach so that the sense of touch is equally confined. There are few foods ingested that have not been altered by the process of manufacture in some way, and thus even taste is artificially conditioned. Finally, even the muscle sense is stimulated by the activity of the muscles in exertion against artifacts, moving them about or altering their shape.

All of this is bound to have serious biological repercussions. Anatomical development over its long history has been shown to be a matter of adaptation through natural selection. It is assumed that this process accounts, for instance, for the adjustment of the respiratory system to the contents of the atmosphere, of the muscular system to the geosphere, of the digestive system to the biosphere, and of the nervous system to human society (the "sociosphere").

Now in maladaptive behavior, there is usually phyletic extinction; but it is a peculiar feature of human society that it endeavors to bring the victims along. This has the double merit of helping them and of learning from the causes of their predicament how healthier specimens may better adapt and so survive. Space medicine is a recent development intended to study how to provide for extraordinary conditions, stresses, for instance, brought about by

gravity increases and by enormous accelerations in speed. But what is not equally recognized is that there are, so to speak, no ordinary conditions. The life expectancy has been extended and the buffeting multiplied.

Look at the individual from the point of view of the cultural environment in which he is presently immersed. See him as the recipient of stimuli projected from artifacts. He shaves with an electric razor, rides in a subway, rises in an elevator, operates a typewriter or a high speed computer, while his wife does the washing in a machine designed for the purpose, cooks on an electric grille and waits for his return to relax with the radio. They live in a world populated by little motors which they do not understand and which far outnumber them. But this is an empirical area and there is an experimental science which investigates it. The domain is that of social psychology, which is the study not of social groups and their behavior but of the modification of individuals by institutions and cultures.

The common world is a physical, chemical and biological world. The social world is a selection made by the alternation of responses to environmental stimuli in the form of constructions : tools, symbolic communication systems, institutions, cultures. Here the group decides, though not as a group, but rather as individuals in whom the group participates(2).

The gap between cultural artifact and psychological individual is the one the neurological circuit has to bridge. The issue always turns on whether the diversity of organic reactions can be stretched to cope with the complexity of conditions produced by the scientifico-industrial culture. One method is to extend technological assistance to the various organs : spectacles for the eyes, magnifying devices for the ears, prosthetic devices for the limbs, and so on. We see the problem more clearly in the case of a man who operates his television set with an artificial hand, watches it through corrective glasses, and listens to it by means of a hearing aid. These mechanical extensions to the receptors and effectors are in many ways quite satisfactory ; and although they contribute toward enlisting the individual in the culture in a way calculated to render him an irreversible dependent, they also help to stave off the reactions in which the breakdown of functions would otherwise occur.

We may, however, do well to consider a set of reactions in which breakdown does occur. A formidable one concerns language. An early and well marked mental defect is the loss of the ability to deal with abstractions. This may take one of two forms : either the individual loses the ability to abstract, or he loses the ability to control certain of his abstractions.

Inability to abstract is a well known maturational defect, but sensory and motor disturbances are often accompanied by symbolic deficiencies. Patients with brain injuries in the general region of Broca's area, the third left frontal convolution, avoid abstractions in favor of concrete terms ; they cannot understand classes and class relationships. Aphasia is manifested by (among other symptoms) a lowered capacity for abstract thought, a deficiency shared by psychopathic personalities.

If the loss of the ability to abstract characterizes one type of mental disease, the loss of the ability to control abstractions characterizes another. There are at least two varieties, exemplified by the hebephrenic and the paranoid schizophrenics. In the former case, we have the spectacle of displacement into a fantastic private language from the failure to participate in conventionally established abstractions. In the latter case, the phenomenon is one of uncontrolled conventional generalization. The avoidance posture of the paranoid compels him to select particular threats in his environment, or to mistake neutral or friendly elements for threats. As the response of rage is made to the stimulus of fear, the inductions of the paranoid proliferate indiscriminately. " 'This man is against me' implies 'All men are against me' implies 'I am being persecuted.' " The organization of the antipathy of all men is unwarrantedly assumed in this enthymeme.

Neurotic behavior is maladaptive behavior ; psychotic behavior marks the retention of maladaptive habits, their establishment as a personal but less than provisional security. The motivation of survival has replaced the need of inquiry, a distinct regression. At the same time, an autistic ad-

justment is not an acceptable settlement, for it decreases the external stresses at the cost of increasing the internal strains. Hence the prevalence of suicidally inclined patients in mental hospitals.

There is, as Walter has pointed out, only one chaos(15). The chaotic world of the psychotic is to that extent a common world. But there are many types of order. The approximation to the condition of chaos on the part of the stimulus-world is an approach to zero input. The world of the hebephrenic is a chaotic world from which stimuli have been held to a minimum, and as a consequence the activity of the higher centers of his nervous system no longer constitutes a learning process. External order, in short, is a condition of proper functioning for the organism, and external order can be apprehended only through the abstract symbols of a technique of communication, which is to say, through a language.

The history of the organism, which must be taken into account in explaining its behavior, does not mean references to the past but to those alterations in the organism made in the past but existing in the present, alterations such as the posited engrams and the more manifest habitual behavior patterns. Unfortunately for the stressed individual, these include conflicting schemata : the public retention schema containing the ideals of social behavior, as taught in early years by parents, teachers and textbooks, and the statements of public officials ; and the private retention schema containing the hard facts as personal experience has revealed them : as for instance the cutting edge of the selfishness or the dishonesty of others, bitter disappointments, secret but forbidden enjoyments, short turns to success. In other words, as the two types of schemata collide, the conditions for private conflict are laid down early and well. They insure that the individual will have the task of integrating his own conflicting schemata before adapting to the alien world of his culture's devising. If he fails to succeed in this, he has little choice but to subside to lower integrative levels ; lower organisms are not capable of sustaining diverse retention schemata, and psychotics no longer undertake to do so.

The exceptions, perhaps, are sufferers from paranoia, who keep the external world separate from their delusional systems, and the psychopathic personalities who persist in expecting agreement from the external world for theirs. The high order of logical structure retained in paranoia for the delusional system is spread by the psychopathic personality thinly over the connections between his own goal-seeking and the objective facts. Both are victims of atrophy of the feelings, and lack all empathetic reactions. Something of this sort is suggested by the discovery of the dysfunction of the autonomic system in psychotic individuals(10) but the difficulty is in all likelihood more widespread.

Psychotics are quite capable of dealing with artifacts, but the social contacts have been cut at the level of inter-personal relations. What does this mean, except that the psychotic denies an interaction and looks for affects that flow in one direction only. He can take, but he is in no position to give.

III.

In the first part of this paper were set forth some of the stages in the process whereby cultures have developed out of the attempts to anticipate and prepare for the satisfaction of future basic tissue needs. We saw how the brain, which came to the fore in this effort to help feeding and breeding, ended by taking precedence over them ; so that whereas it had existed for them they now had come to exist for it. This new adjustment led to a species of human maladaptation. In the second part of the paper it was shown how, in the attempt to live in the environment brought about by the cultures they have produced, men have tended to break down. Psychoneuroses and psychoses are the results of the stresses of complex scientifico-industrial cultures.

Now it will be necessary to address ourselves to the solution of problems raised by the existence of culture as the human environment. Cultures are not new and the individual strains of living in them are not new, either. But in earlier cultures, the cultural environment was a small part of the available environment. In the scientifico-industrial cultures it begins to encroach strongly. Thus it raises problems which, if not altogether novel, present difficulties to

a degree that amounts to a major crisis. What, if anything, can be done about it?

We may perhaps begin the discussion of this question by taking a page from the science of neurology. There we find two conflicting conditions. It seems that for the normal functioning of the human organism both the constancy of the external environment and differences in stimulation are required. Perception appears to hang upon the former and consciousness upon the latter.

Perception is of a physical world independent of the observer, a world which is stable, rigid, solid and orderly in a way which, as Gibson says, gives "objectivity to our experience" and makes perception itself possible(6). For perception—in this case visual perception—is constructed to encounter such conditions and relies upon finding them. Gellhorn goes so far as to assert that "the constancy of the external environment is a cortical function"(5), without which the individual would neither be suitably oriented nor able to act purposively.

That consciousness would not be possible without differences in the objective field of consciousness has been shown by experiment(1). Monotonously repeated stimuli lead to sleep. The inner ear, which is so sensitive to any irregular forces, does not react at all to uniform motion. Order among stimuli is relaxing. Hypnotism relies heavily upon this effect, and anyone who has driven a car for hours over a straight and level road can testify to its truth. The uniformity of perfect order or of chaos allows for no stimuli at all, and without the continuous input of diverse stimuli there is no consciousness.

How, then, is this paradox to be related to the problem of resolving the psychopathological strains which complex cultures impose upon their individual members? The next step is to discover the optimal pragmatic set of conditions under which cultures can be maintained with their immense benefits, but without serious damage to the individual. How much progress in cultures can the individual support? There are, once again, two parts to this question. There is the problem of the internal dislocation in the individual: the distortion of the private retention schema by the public. And there is the problem of the external dislocation of the culture: the distortion of the institutional structure by the ascendency of a particular institution.

Both problems resolve themselves into one again when we consider that the state of the culture is operant in both cases with equal effectiveness. For the internal dislocation of the individual depends upon the character of the cultural stimuli to which he is subjected, and the institutional state of the culture depends upon his own sense of what institutions are most important in conducting inquiries. Thus at the present time science is the crucial institution; it offers not only to feed the basic tissue need of pure inquiry but also to further the long term supply of satisfactions for the survival needs. As a consequence the rapid rate of change in fundamental theory brought about by the new conceptions of matter and of the cosmos has compelled a revision of the public retention schema, while technological advances have improved the food supply, both as to quantity and quality, increased the safety of birth-control and provided efficient contraceptives.

However, these changes have been brought about at a rapid rate, and the resultant challenge to the homeostasis of the individual is alarming. Too much and too frequent stimulation has its price. It is possible to over-stimulate, with a result not unlike the absence of all stimulation. To quote an athletic director, "these ailments are continuous—always something new" (11). The life expectancy has been dramatically extended but so has the prevalence of mental illness. The enormous rise in the population of our mental hospitals in recent years, together with the immense number of psychoneurotics and even psychotics who are able to maintain themselves on a precarious balance outside, is well known.

At this point, it seems impossible to turn the clock back. The cerebral development, and in particular the development of the frontal lobes, prohibits the mere existence of man at the monotonous level at which change and progress in living conditions prevails. The cerebrum assures the continuance of inquiry whereas the more fundamental mechanisms of the reticular forma-

tion of the brain stem requires a constancy of the external environment. From the stimulus end, the cultures we inherit make more complex inquiry possible but also block them out by vested interests in already existing knowledge. Science is inquiry incarnate, but government has now joined religion in regulating such inquiry and by consequence slowing it down or giving it more practical direction.

Thus the psychological solution could be effected by a cultural shift : easier adjustment of the organism to a slower gain in the increase of knowledge. As for the mentally unfit, this would be especially true. If stronger measures are needed, then deliberate cultural regression could be practiced. Hospitals for mental diseases ought to be constructed in the remote countryside, and approximate as near as possible to primitive conditions. Outdoor plumbing, wood fires for heating and cooking, crude accommodations, all designed to allow the readjustments to be slower. This is a possible solution of the future, but it is not the ideal one. The ideal solution would combine the peace and serenity of conservatism with the excitement and vitality of progress, avoiding both the stalemate of repetition and the turmoil and insecurity of rapid change. There would be no longer any traditional ways of doing things but instead habits would be hooked up to an irregular rate of advance. Another biological adjustment would come into play : the tuneable homeostat of a servomechanism as the functioning model of the central nervous system(12).

So much for the psychological subject. As for the object, it would have to involve a better adjustment between institutions. No single institution would be allowed to run away with the others, but novelty would be provided by all. Cultural lags in institutional advancement would be studiously avoided and the proper institutional relations discovered and established. The elimination of human maladaptation depends upon the provision for a proper cultural environment, the ecological ideal upon the proper interdependence between the organism of the individual and the environment of the culture.

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THE MEASUREMENT OF AN INHIBITORY PROCESS IN HUMAN HIGHER NERVOUS ACTIVITY: ITS RELATION TO ALLUSIVE THINKING AND FATIGUE [1]

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THE NATURE OF ALLUSIVE THINKING

Bleuler(1) was the first psychiatrist to point out that schizophrenics who have recovered from their illness in all other respects continue to show, in milder form, the disordered thinking they suffered from when frankly ill. This observation was repeated by Skottowe(2) who stressed, in addition, that in the recovered patient it is only abstract thinking which remains affected. Concrete thinking, the ability to relate his day to day experience may be disturbed in the schizophrenic; the recovered patient only shows evidence of thought disturbance when he abstracts, or makes deductions, from his experience.

This observation of Bleuler and Skottowe has not been generally confirmed by the majority of psychiatrists. This is considered by the author to be due not to the inadequacy of the descriptions of Bleuler and Skottowe but to the fact that, as with other clinical phenomena, training is required for its detection. If, when learning to recognise the various type of heart sounds, one had to rely solely on the descriptions in text-books without being able to check one's observations against those of the trained physician, the possibility of mastering this task with accuracy would be considerably reduced. In fact, even with the intense training in the detection of physical signs given in most medical courses, recent studies(3) have shown that the reliability of senior physicians to detect such signs as impaired breath sounds, hyperresonance, impaired cardiac and liver dullness is much lower than would be expected. However, no one would argue from this evidence that these conditions did not exist. If this applies to the detection of physical signs it must apply even more so to the detection of differences in the mental states of individuals. For there to be reasonably common agreement as to what are meant by such terms as "flatness" or "incongruity" of affect, there must be repeated demonstrations of these conditions by the teacher to the student. Still more so must this consideration apply to the recognition of a type of abstract thinking so subtly different from that present in the rest of the population that its existence has been so far noticed by only two psychiatrists.

For this reason, the author, in putting forward yet another description of this type of thinking, does not expect that it will enable people to recognise this condition clinically. However, as he considers that the present study establishes its existence and throws light on its causation, it is desirable that the reader has as clear an idea as possible of its nature. Both Bleuler and Skottowe observed this thinking only in recovered schizophrenics and so regarded it as a residual symptom of this illness. However, it has already been advanced by the author(4) that this is the normal form of abstract thinking of a percentage of the population. That is, the majority of persons in whom this thinking is found have never suffered from schizophrenia. It is considered that this mode of thinking acts as, or indicates the presence of, an inherited predisposition to this illness, thus explaining its presence in those who recover from this condition. It has been shown(5) that it is present in one parent when it is present in a patient and the present study gives further evidence of its occurrence in normal individuals. Furthermore, it is considered that it conveys certain advantages to the possessor(4). Therefore, to avoid any implication of pathology and to stress one of its important positive aspects it will henceforth be referred to as "allusive thinking."

Though the author is convinced that this type of thinking is either present or absent in any one person, it is not suggested that when present it does not vary in degree. In

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[1] Read (in part) at the annual meeting of the Australian Association of Psychiatrists, Adelaide, South Australia, Oct. 17-20, 1960.

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fact, as Bleuler noted, with some individuals one only becomes aware of its presence after persistent observation. One reason for this is that as only abstract thinking is affected, unless the subject being examined can be made to think at this level, one cannot be sure that the potential for this type of thinking is absent.

As it is necessary to make the subject abstract, it is easier to detect the more obvious forms of allusive thinking in an interview situation, where the nature of the conversation can be determined by the examiner. Also, this allows the possibility of questioning the subject as to what he meant, since the examiner must be convinced that the subject is completely satisfied with his statements and that any obscurities in them are not due to his clumsiness of speech or an inability to express himself of which he is aware. In an interview, allusive thinking manifests itself in two ways. Firstly, words are used which are slightly inappropriate because the subject expresses himself in too few words (over-condensation) and at a more abstract level than is suitable, as in the following example:

Examiner: How are you now compared to how you were 5 years ago?

Subject: The only difference now is *loss of material benefits.*

Questioned as to what he meant by this he said he had been forced to sell his house and car to pay for analytic treatment. Secondly, ideas are expressed imprecisely, again, generally, the fault being in the choice of over-abstract concepts. The following examples are all taken from interviews with the students of the experimental group: "The ultimate questions of motivation are non-psychological." Asked what this meant he replied: "It (psychology) may tell you the cause, it won't tell you the reason people do things."

Another spoke of *The Cocktail Party* which had been very meaningful to him. Asked what meanings he saw in it, he said of the people in the play, "The ritual gave them a sense of conformity which gave them a sense of continuity."

These examples demonstrate that practically complete failure to communicate can result from allusive thinking.

It is not, however, claimed that persons with this mode of thinking always fail to convey their meaning, but only that they use words inappropriately in a characteristic way. Often the meaning is apparent and just as many psychiatrists learn to communicate with schizophrenic patients so well they lose the ability to appreciate the existence of schizophrenic thought disorder when it is often grossly apparent to newcomers in psychiatry, so this lesser form of unusual thinking passes unnoticed by most people for the same reason. Of course, one does not rely on the occurrence of one such expression in a person's speech to diagnose this condition, but on their repeated employment.

When this sort of analysis is made of speech the objection is usually put forward that various psychological factors would account for these statements. Of course this is so. Perhaps the most probable would be that these persons lack verbal fluency. To demonstrate that this need not be the case the following example is taken from *Voss*, widely considered one of the greatest of the post-war novels.

> How her defection (from religion) had come about was problematic, unless it was by *some obscure action of antennae*, for she spoke to nobody who was not ignorant, and innocent, and kind. Yet, here she was become what, she suspected, might be called a rationalist. If she had been less proud, she might have been more afraid. Certainly she had not slept for several nights before accepting that decision which had been in the making, she realized, several years. Already as a little girl she had been *softly* sceptical, perhaps out of boredom; she was suffocated by the fuzz of faith. She did believe, however, most palpably, in wood, with the reflections in it, and in clear daylight, and in water. She would work frantically at some mathematical problem, even now, just for the excitement of it, to solve and know. She had read a great deal out of such books as had come her way in that remote colony, until her mind seemed to be complete. There was in consequence no necessity to duplicate her own image, unless in glass, as now, in the blurry mirror of the big darkish room.

Apart from the somewhat odd expressions, there is a degree of irrelevance in many of the associations and there is at least a degree of failure to communicate the

meaning of the last sentence, in that one cannot be entirely sure of its meaning. If "duplicate her own image" means believe she has a soul, this utilisation of both the abstract and concrete meanings of the phrase is an excellent example of the author's mastery of allusive, evocative writing.

It was previously stated that in fact the allusiveness of such thinking was one of its greatest advantages. By this is meant the ability to allude to more than one concept, without their being actually stated. One's clinical impression is that the quality of attention is different in persons with this thinking. It is coarser, that is, it includes more concepts, but cannot become narrower, so that the concepts that are included in attention at any time are not accurately defined. Hence those with this thinking can convey more, but in an imprecise way. Here is an example from the novelist Ronald Firbank. He writes of one of his characters, Lady Parvula de Panzoust, who could perhaps be best described as a deliciously wicked woman. "She was looking charmingly *matinal* in a simple tweed costume, with a shapely if perhaps *invocative* (this he has himself emphasised) hat . . ." The religious overtones of both these words add enormous subtlety in their context as his art lies in the evocation of a world at once religious, depraved and artificial.

The author of course realises that he has not disposed of the many alternative elaborate psychological explanations that could be put forward to account for the employment of the types of associations described. He prefers to call upon the principle of economy, though aware that unlike other scientists, psychiatrists tend to prefer its converse, the principle of affluence—never employ a simple explanation if a more complex one will serve your purpose. He therefore argues that if it can be demonstrated that the behaviour of persons assessed as showing allusive thinking differs in predictable ways in a variety of situations from that of persons without such thinking, the existence of this type of thinking as a clinical entity is sufficiently established. It has been demonstrated elsewhere(6) that the performance of allusive thinkers on a Sorting Test differs in this way. The present study investigates their behaviour in a learning situation.

THE PRESENT STUDY

It has been suggested(4) that allusive thinking is due to a weakness of an inhibitory process in the higher nervous activity of the person demonstrating the condition. This study is designed to test this hypothesis. Such an hypothesis is only comprehensible within the framework of a theory which explains mental activity in terms of the interaction of excitatory and inhibitory connections. Both Bleuler and Pavlov have independently put forward such a theory. Neurophysiological evidence for the theory has recently been advanced by Kaada, *et al.*(7, 8), who have suggested that this generalised inhibition accompanying mental activity is produced by the arousal response. Bleuler(1) considered that the condition he called schizophrenic thought disorder—the employment of inappropriate associations—was due to a weakness of the inhibition which accompanies attention and produces the "constriction of the field of conscious awareness" characteristic of all normal thinking. Pavlov(9) found that certain dogs showed an inherited weakness of inhibition which resulted in their showing certain characteristic "personality" traits. The author (4) combined these two theories and put forward the hypothesis that allusive thinking in humans is due to a similar inheritance of a weak inhibitory process.

If this hypothesis is correct it must mean that there are mechanisms common to the nervous systems of both man and dog and it is such a mechanism which is affected in this way. Therefore, to test this theory it would be most reasonable to investigate behaviour which is influenced by the action of such a common mechanism. The learning of a serial set of responses is the best known example of such behaviour. Munn(10), comparing the performance of humans and rats in learning a maze states :

The number of trials required to learn, the number of errors made, and the time consumed, are not greatly different between rats and college students. Sometimes the rats come out slightly ahead and sometimes the students.

The mammalian nervous system has through its development been enabled to master tasks of greater and greater complexity. However, its ability to master this simple task—the learning of a serial set of responses—has not significantly altered. Here it would seem its performance is limited by some characteristic, unalterable by evolution. Such a task then is most likely to provide information about a mechanism common to the mammalian nervous system irrespective of species.

When the learning of a serial set of responses is investigated it is found that the middle portion of such a series is the hardest to learn. Within the framework of Pavlovian theory this can only be due to the operation of an inhibitory process and it has been so regarded by workers utilising this framework as well as by other learning theorists who also accept a concept of inhibition(11-13). The author has in the present study investigated the hypothesis that this inhibitory process is weaker in persons who show allusive thinking, that is, that those with allusive thinking will show less difficulty in learning the central portion of a serial learning task than will persons without this type of thinking.

THE EXPERIMENTAL GROUPS

The results obtained with two groups are reported, as the subjects of Group 1 were not available to repeat the experiment with an alternative design.

Group 1 consisted of male undergraduates of the University of Adelaide, males only being employed as they were also investigated with a conditioning technique devised by Lovibond which was suitable for use only with this sex. (The results obtained with this technique are being reported separately). Fifty-five students, mainly the male students taking psychology, were interviewed individually for approximately 10 minutes by the author, who attempted to divide them into those with and those without allusive thinking on the basis of the description given above. It would, of course, be expected that the reliability of this assessment would be lower than that which would be obtained with longer and repeated interviews. However, it was considered possible to classify in this way 52 of the students. Of these, 38 came for investigation at the subsequent session and so made up Group 1. Of these 38, 18 had been classified as having allusive thinking; 20 had not. The mean age of the former was 22.9 years (range 17-34) and of the latter 21.9 years (range 18-39).

Group 2 consisted of 20 adults well known to the author and selected by him to include 10 persons with and 10 without allusive thinking. All with the exception of a housewife and a fifth-year male medical student, were working effectively at a professional or executive level and all were free from signs of overt psychiatric illness. Apart from the student all were university graduates or of equivalent educational status. The sub-group with allusive thinking consisted of 7 males and 3 females with a mean age of 31.2 years(range 23-38) and that without it also of 7 males and 3 females, with a mean age of 31.0 years(range 24-35).

METHOD

It was found by Pavlov(5) that the nervous "type" of dogs could be assessed more easily if they were tested after their nervous processes had been strained by carrying out a difficult task. This finding was utilised in the design of this experiment. Subjects were required to learn two lists of low association nonsense syllables (this being found a difficult task by most people), followed by two lists of words. This design was used with Group 1. The subjects of Group 2 were given two stylus mazes to learn between the nonsense syllables and the words. As maze learning is accomplished by most people with little concentration, it was considered this would allow the nervous processes to partially recover and thus might make differences in nervous "type" more obvious. The subjects of Group 2 then repeated the experiment, learning first a list of words, then lists of nonsense syllables and then more lists of words. This design was introduced to demonstrate that learning lists of nonsense syllables did in fact strain the nervous processes. The details of these 3 designs are given in Table 1. One minute intervals were allowed between the learning of each task. The lists of words and nonsense syllables were presented by means of a memory drum which exposed one word

TABLE 1
Order in Which the Learning Tasks were Administered

Group 1	List of N. Sylls.[1]+	List of N. Sylls.[2]	List of Words.[1]	List of Words.[2]		
Group 2-						
Experiment 1	List of N. Sylls.[1]	List of N. Sylls.[2]	Maze. [1]	Maze.[2]	List of Words.[1]	List of Words.[2]
Experiment 2	List of Words.[1]	List of N. Sylls. [1]	List of N. Sylls.[2]	List of Words.[2]	List of Words.[3]	

+ N. Sylls. = Nonsense Syllables.

or syllable for a period of 3 seconds and then instantaneously replaced it with the next. Learning was by the method of anticipation. In each case the lists of nonsense syllables contained 9 items and the words 16. The stylus mazes contained 16 choice points.

In the case of each task, learning was carried on to two consecutive correct performances of the list or maze, or to 16 trials, whichever came first. The nonsense syllables were chosen from the lists of those of low association value given by Hilgard(14). In the case of Group 1 and Group 2 Experiment 1, the words were chosen to make up two lists, one of words having low association value with each other, and the other of words having high association value with each other. (This difference is not significant for the results being reported; other results are being published separately.) The words for these two lists were derived from data of Mednick and de Vito(15). In the case of Group 2 Experiment 2 the words were simple words chosen at random from the dictionary.

RESULTS

The difficulty each subject had in learning the central portion of the lists was quantified by the use of the following formula, the resultant being termed the Inhibitory Index:

$$\text{Inhibitory Index (I.I.)} = \frac{\text{Total number of items learned correctly up to but exclusive of the first correct performance or in 16 trials, whichever criterion was reached first.}}{\text{Total numbers of items in the middle ¼ of the list learned correctly in the same number of trials.}}$$

If no inhibition were operating there should be equal likelihood that items within or without the middle ¼ would be learned and the I.I. would = 4. The stronger the inhibitory process the more the I.I. would exceed 4.

The method of assessment used was based on the hypothesis that learning the nonsense syllables would weaken the inhibitory process being measured. It is considered that this is a labile, dynamic process, changing in intensity with the condition of the nervous system, as Pavlov(5) found with the inhibitory process in dogs. Hence it was decided to attempt to sample the range of the fluctuation of this process by obtaining more than 1 measurement. For this reason, 2 lists of words were used in each experiment, considerations of time preventing more than 2 being used. In the experiment with Group 1 and with Group 2, Experiment 2, the word lists were administered immediately after the nonsense syllables so the inhibitory process was being measured at its weakest. Hence in these 2 experiments it was decided to compare the lower of the 2 values of the I.I. for each subject. With Group 2, Experiment 1, the maze learning was interposed between the learning of the nonsense syllables and words to allow the inhibitory process to commence to recover. Hence the inhibitory process was being measured in its recovery stage and it was decided to compare the higher of the 2 values. The decision to employ these methods of assessment was made at the commencement of the experiments.

In all 3 experiments the trend was in the predicted direction, that is, persons with allusive thinking had lower I. Indices than people without. In the case of Group 2, the scores of 14 of the 20 subjects, (70%) were

TABLE 2

I. Indices-Group 1, Word List (lower of 1 and 2)		I. Indices-Group 2, Word Lists		I. Indices-Group 2, Word Lists (corrected to equalise differences in learning)	
Subjects without Allusive Thinking	Subjects with Allusive Thinking	Word List 1	Word List 3 & 4 (averaged)	Word List 1	Word List 3 & 4 (averaged)
5.9	4.9	5.6	17	5.6	27
5.1	4.7	4.6	5.2	5.5	5.1
5.0	4.5	12.8	6.3	12.8	6.4
4.7	4.2	9.6	5.5	9.6	5.5
4.7	4.1	20	6.6	30	7.9
4.6	3.9	6.5	4.3	10.9	4.3
4.3	3.9	4.9	4.1	5.1	4.1
4.3	3.9	14	6.7	14	7.8
4.1	3.8	6.6	3.6	5.6	3.6
4.1	3.7	4.8	4.9	5.5	4.9
4.0	3.7	5.0	4.7	5.0	4.9
4.0	3.6	5.2	5.0	5.3	5.0
3.9	3.5	17.5	5.4	17.5	5.9
3.9	3.5	4.9	3.8	6.1	3.8
3.7	3.3	9.8	4.4	9.8	4.7
3.5	3.2	7	6.0	7	6.9
3.5	3.1	4.1	5.6	4.1	5.6
3.4	2.7	7.3	15.8	10.1	15.4
3.3		4.4	5.4	4.4	5.2
3.2		10.6	4.1	10.6	4.0
4.2	3.8	8.3	6.2	9.2	6.9 Means
p .05		p .05		p .025	

in the direction predicted. This trend did not reach significance. In the case of Group 1 the scores of 25 of the 38 subjects, (66%) were in this direction and with this larger group this difference is significant at the 5% level, using the Mann-Whitney test. The I. Indices for this group are given in Table 2.

To investigate the hypothesis on which the method of assessment was based, that the learning of nonsense syllables would weaken the inhibitory process under investigation, Experiment 2 with Group 2 was carried out. The I. Indices for the subjects' performance on word list [1], administered before the nonsense syllable learning, were compared with the average of the two I. Indices for the performance on word list [2] and word list [3], administered after the nonsense syllables. The I. Indices after nonsense syllable learning were lower than those before. This difference is significant at the 5% level, using the Wilcoxin test of paired replicates. These scores are also given in Table 2. As the subjects learned list [2] and list [3] better than list [1], presumably an effect of practice, it could be argued that the difference in the I. Indices is due to the greater number of words learned in 16 trials. To allow for this the I.I. was recalculated for each subject's performance on list [2] and list [3] up to the trial when they had learned the number of words nearest to that learned on list [1]. The average of these two I. Indices was still lower than the I. Indices for the subjects' performance on list [1]. This difference is significant at the 2.5% level using the Wilcoxin test. These scores are also given in Table 2.

Discussion

It has been shown that the inhibitory process which produces difficulty in learning the central portion of a serial learning task is weaker in people with allusive thinking. It is of importance to know the nature of this inhibitory process. Most workers have considered it to be due to the setting-up of conflicting associations(16). For ex-

ample, if the items of a series are represented by a–b–c–d, they consider the associations set up between a and c and a and d interfere with the learning of a–b. However, it has been shown by the author in the present study that this difficulty in learning the central portion of a list is lessened after carrying out a difficult learning task, though learning ability is not diminished. This must mean that this inhibitory process is in fact an active one which is weakened by fatigue, and not merely a passive interference of conflicting associations which would still be set up in the above situation.

It is the author's belief that this inhibitory process is that which accompanies attention and produces subjectively the "constriction of the field of conscious awareness" and objectively the electroencephalographic change termed the attention or arousal response. This response is produced when past learning is inaccurate, that is, when prediction fails—when an unexpected stimulus presents itself or when an expected one fails to appear. One of the biological roles of the response appears to be the correction of this faulty learning by setting up excitatory connections between the cortical representation of the unexpected stimulus and that of the immediately previous events and by weakening (with internal inhibitory connections) the excitatory connections active prior to the response, which led to the faulty expectation. Hence attention aids the learning of the items it is focused on at the moment while inhibiting those it was focused on previously. When a series of responses is being learned, attention is focused on one after the other, so that while excitatory connections are established to those in the focus of attention, inhibitory connections are being established between the others.

The author considers it is this inhibitory process accompanying attention which produces the effect measured in the above experiment. The finding that this process is weak in persons with allusive thinking is in conformity with Bleuler's theory as to the nature of the thought disturbance he described and with the author's clinical description of this condition. Futhermore, Malmo and Amsel(17) have shown that the reverse condition—an increased difficulty in learning the central portion of a list occurs in patients after partial frontal leucotomy, when compared with normals. Partridge (18) found that such patients when concentrating on one activity did not have their attention distracted, even by significant events happening about them. For example, one such patient when engaged in conversation did not notice her kettle boiling over. This suggests the inhibitory process associated with attention is stronger in such people. Hence the finding of Malmo and Amsel is in conformity with the author's theory that the difficulty in learning the central portion of a list is due to the operation of the inhibitory process associated with attention.

It was stated earlier that the author had shown that when a schizophrenic patient shows allusive thinking one of his parents does also. It could not previously be excluded that this familial tendency was due to transmission through environmental contact with the parent rather than being due to a hereditary factor. However, the reduced difficulty in learning the central portion of a word list found in people with allusive thinking can hardly be explained in this manner. Therefore, this finding considerably strengthens the author's hypothesis that allusive thinking is inherited in dominant fashion.

Summary

The observation of Bleuler and Skottowe that certain recovered schizophrenics continue to show a special form of thinking is examined. The author's theory that this thinking is also shown by a percentage of the normal population who have never suffered from schizophrenia is stated and his clinical description of this mode of thinking, termed "allusive thinking," is elaborated.

It is shown that normal subjects with this thinking show less difficulty in learning the central portion of a word list than do subjects without it. Evidence is advanced that this is due to a weakness of the inhibitory process accompanying attention. This is considered to support Bleuler's view that this mode of thinking is due to such a weakness. It is also considered to support the author's view that the familial occurrence of allusive thinking is due to inheritance rather than environmental contact.

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SPIRIT POSSESSION IN HAITI

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Spirit possession is a phenomenon known to mankind since Biblical times. It refers to a relationship existing between spirits and humans manifested by the possession or incorporation of the human being by the spirit, so that the behavior of the human is taken as the behavior of the spirit. This phenomenon is widely present throughout the world and has been reported not only in Africa and Asia but on other continents as well(10). Perhaps the most complete survey of the subject was undertaken by T. K. Oesterreich who published the classic volume *Possession* in 1930 wherein he considered the phenomenon among primitive races, in antiquity, in the middle ages and in modern times(14). The behavioral character of the phenomenon, most writers agree, has much the same range of appearances from one society to another. Explanations have always differed, however, as have attitudes toward the possessed. Oesterreich has suggested that throughout the ages and at all levels of civilization the phenomenon has been a manifestation of a psychic compulsion.

There is an extensive literature on the subject which has been analyzed in a number of ways. All the theories, metaphysical, theological or psychological have been characterized by a necessity to explain the origin of the new personality emergent in the possessed. Thus the Biblical interpretation concerned notions of the Devil and demons, explanations which persisted in the Western world late into the 19th century. Moving from animistic assumptions of spirit movements, psychological interpretations have sought the explanation in psychic processes. Thus possession has been explained by psychoanalytic theorists as a return of the repressed, wherein Id representatives overwhelm the Ego in a state of dissociation(8, 10). Others, describing the phenomenon in Haiti, have considered it as theatre(13), as a confessional played but not spoken(13), and as a controlled means for communication normally with the supernatural(6). Perhaps most interesting in the literature on Haitian possession are the personal accounts of individuals who have themselves become possessed. In one subjective account one senses the emphasis placed on the situational stimuli necessary to enter into the trance state of possession(2).

The phenomenon of possession has an important role in Voodoo.[2] For adepts it is the means by which the Voodoo *loa* (spirit deities) interact with mankind. Through possession of a member of the congregation the *loas* enter the midst of the congregants to punish, admonish, reward and encourage them as well as treat and cure their ills and worries. For the adept the *loas* are recognizable by their appearance, behavior and temperament and other human qualities and characteristics as they are manifested in their human agents(4).

Possession occurs when a *loa* selects "to mount" or "enter the head" of his *cheval* (person possessed). The soul of the person (*gros bon ange*) is replaced by the *loa*. The possessed loses all individuality and becomes the vehicle of the *loa*. All his thoughts and behavior are attributed to the *loa*. Many speak in African dialects, the languages preferred by most *loas*. Some possessed by *Damballa*, the snake god, may perform extraordinary feats of agility and balance, such as tree climbing and branch swinging, often climbing down the trunk head first. Others may hold hot irons in their hands, chew broken glass or walk bare-footed over hot coals. After the possession, most are amnesic for the preceding events(11). As Madame Tisma Innocence, an old and revered *mambo* (Voodoo priest-

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[2] Voodoo, the Haitian folk religion, is derived from a syncretism between African animism and Catholicism. This religion is an elaborate one containing a hierarchical structure of gods, saints and angels, a sacred cult, propitiatory rites, temples and a stratified clergy. It has been practiced secretly for many years because of religious and political pressures but currently enjoys relative freedom, and ceremonies take place under the aegis and approval of public officials.

ess), said: "You loss your consciousness. You have only your body. Your soul is replaced by the *loa*. The *loa* controls your brain, you forget everything."

The disorganized, theatrical and histrionic quality of possession varies from one individual to another, but usually the more experienced individuals have smoother and less chaotic transitions to possession. Exceptions to this exist and depend on the nature of the *loa* possessing the adept so that a violent *loa* will be expected to possess his *cheval* in a violent stormy way. The struggle the *cheval* has in bearing his "mount" is considered as manifestation of this difficulty of "bearing a *loa*." Most Voodoo audiences show great sympathy for the person struggling with a *loa*.

Possession is a usual feature of ceremonies but it is also seen during divination and treatment situations in the *hungan* (Voodoo priests) who invoke the power of their *loas* for these purposes. Occasionally some have observed it in such non-religious surroundings as market places(13). Others have identified the phenomenon outside Haiti occurring in Negroes many generations removed from their African heritage(1).

POSSESSION OF A HUNGAN

For purposes of divination, fortune telling and curing, most *hungan* invoke their *loas* through incantations, prayers and symbolic offerings. In the *hounfort* (temple) and seated before his altar with visitors seated behind him, the *hungan* performs such rituals as reciting the rosary, dropping holy water in patterns of three and lighting candles. He gradually becomes absorbed in prayer, softly singing religious chants and crossing himself innumerable times. There is then gradually and progressively an involvement of his back, shoulder, neck and face muscles which contract first independently and then in unison, the *hungan* progressing to a state of shaking tension where his entire body seems involved. Previously articulate speech turns to grunts and his face is painfully twisted until it is unrecognizable. When possessed, the *hungan* turns and greets his audience with his *loa's* characteristic salutation. Henceforth communication is between the *loa* and the audience. All demands for money, sacrifice, adherence to particular treatment regimens, *etc.*, are requests of the *loa*, not the *hungan*.

The characteristic feature of the *hungan's* possession is the facility and ease of transition to such a state. This can best be attributed to his familiarity and extended experience in entering such states. Save for the changed voice, posture and facies, most *hungans* preserve an amazingly keen awareness and consciousness of the ongoing situation and their role in it, and are able to rely on their vast resources of knowledge and intuitive talents in diagnosing and treating, while being possessed.

Throughout the ceremony the participants depend on the *hungan* who both encourages their self abandonment and controls the limits. The *hungan* himself would seem to be able to do this by virtue of the authority vested in him by his office as priest and undoubtedly because of the belief the congregants have in him. Usually he is a sincere individual. Occasionally, however, he is a psychopathic individual who consciously recognizes the culturally defined needs of his congregants which he manipulates for his own profit. In the case of the sincere *hungan* his possession is mild because of the minimum anxiety he feels in becoming possessed. There is little difficulty for him to control his behavior in this culturally sanctioned role. In essence most *hungans* can readily give up those characteristics defining them as individuals, making themselves into religious personages, and becoming thereby culturally recognizable individuals only. All *hungans* in effect are known by the spirits possessing them and not for their own personality attributes.

POSSESSION OF AN ADEPT

Most Voodoo ceremonies begin as the *hungan* kneeling before his altar invokes the spirits and gradually becomes possessed. During the ceremony, influenced by the dancing, drinking, singing and convivial atmosphere, the other congregants frequently become possessed. Their crises, however, are marked by a greater loss of self control and consciousness than are those of the *hungan*. During one ceremonial, I was able to observe closely the

behavior of a *hunsi* (adept) who became possessed. The main feature of the ceremony was the ritual sacrifice of a goat, without a knife. The *hungan* had donned a bright red military uniform and all the female congregants were brightly garbed in red dresses. The ceremony had been going for several hours and there had been much dancing and drinking.

As the seemingly "drugged" goat fell to the floor and convulsively died, a *hunsi* lurched forward through the crowd and screamed. As if crazed by the death of the goat, she threw herself on the floor beside it and lay dishevelled on the floor, her body writhing and arms and legs flailing. She seemed out of contact with her surroundings and quite unconcerned with the possibilities of self injury. As she stumbled up from the floor her swinging arms brushed closely by the bystanders. She doubled up, her face contorted into a mask of agony, and kicked her feet wildly in all directions. Her head bobbed to and fro and she spit blood from a bleeding nose. She was constrained from further violence by two male assistants who gripped her arms tightly. In time she calmed down and only slowly seemed to regain her senses and composure.

According to the congregants this woman had become possessed by the spirit of the dead goat. The *hunsi's* behavior is indistinguishable from hysterical or dissociative behavior trends. This *hunsi* seemed less comfortable and less in control of her behavior during possession than did the *hungan* and unlike the *hungan* did not retain complete control of her consciousness. However she undoubtedly felt sufficiently comfortable in the role of the possessed to permit herself this self-abandonment.

POSSESSION OF A NON-ADEPT

Not infrequently persons several generations removed from a milieu of Voodoo belief and custom present what to believers are clearly the manifestations of possession. These people, unlike adepts who view such experiences as divine approbation, struggle against these manifestations. They refuse to "accept the call of their *loa*" according to Voodoo belief.

Of interest in regard to this phenomenon of possession outside of Voodoo circles is the description of a clinical syndrome recently described in Haiti, a syndrome quite comparable to the Voodoo possession and labeled as such by Voodoo adepts.

L'antite clinique la plus frequente est certainment la psychose aigue rappelant la description de la "bouffée délirante aigue": Installation bruitale, confusion marquée, excitation psychomotrice avec conduite, denudavve et aggressive et souvent délire religieux hallucinations visuelles et auditives parfois; le tout de courte durée et ne laissant que peu on pas de deterioration(15).

This description corresponds almost exactly to that of a *hungan* who characterized this illness as a form of possession due to the individual's unwillingness to accept a *loa*. According to Sanseigne and Desrosiers, such patients initially diagnosed as hysterical often deteriorate into chronic schizophrenics after repeated episodes. The *hungan* too, stated that the course was usually short but that occasionally the patient remained "crazy as a punishment from the *loa*."

Of interest is that oftentimes this picture of *bouffée delirante aigue* is accompanied by paranoid elements with religious delusions based in general on the themes of Voodoo and associated with delusions of persecution. Here it would seem that though such individuals are still affected by elements of Voodoo culture which call forth marked anxiety reactions, they are sufficiently alienated from the peasant culture to be unable to use the cultural mechanisms of anxiety reduction through such recognizable role playing.

NATIVE THEORY OF INSANITY

According to popular belief, human beings are composed of the body, the big good angel (soul) and the small good angel (guardian spirit)(7). It is the big good angel which can leave the body without death occurring. This sometimes occurs during sleep. When an individual is ceremonially possessed, the *loa* supplants the big good angel in the head of the individual. Similarly a sorcerer can force the big good angel from the head of a victim using various magical means, with the soul of a dead person or animal causing the in-

dividual to lose his mind, his insane behavior being considered as the manifestation of the dead soul or animal spirit reincarnated in him. This is one of the main causes of supernatural *folie*. The other cause which follows from ignoring the dictates of a *loa* follows a similar pattern, the *loa* supplanting the big good angel and refusing to leave until the individual has accepted Voodoo, although this does not guarantee surcease of the illness.

In both instances of supernatural *folie* the mechanism of replacement of the big good angel by an outside entity producing insanity is identical with the replacement by the *loa* during ceremonial possession. This fact suggests a close tie between genuine *folie* and ritual possession. Further evidence suggestive of a close association between the two phenomena is the oft repeated and commonly acknowledged fact that the first indications that a man is receiving the call to be a *hungan* from a *loa* are indistinguishable from *folie*. If the individual does not accept the call of the *loa* he may be punished in the form of sickness or insanity. Further suggesting the tie is the fact that *hungans* are believed to be more prone to *folie* than anyone else.

Discussion

We have here sketched out three different patterns of behavior and the native theory of insanity all of which share in common the Voodoo explanation of spirit possession. Certain features related to a predisposition to possession seem clear. Firstly, certain personality traits would seem to predispose an individual to possession phenomena. Secondly, early and long enduring observation of the possession of others makes for familiarity and acceptability of it. Lastly, practice and experience in becoming possessed makes for relative ease in negotiating the transition from the normal to the possessed state.

Furthermore, certain features of the syndrome seem clearly definable. Possession is usually characterized by a reduction of higher integrative functions such as articulate speech, social inhibitions and muscular coodination with a concomitant increase of reflex behavior such as trembling, convulsive movements, muscle twitching, teeth grinding and sucking movements. In many instances of possession, a sensory anesthesia exists allowing the individual to expose himself to noxious stimuli which normally would be harmful. Such phenomena have been explained in terms of hysterical or auto-hypnotic losses of perception. Injury does, however, often occur according to many Haitian physicians who frequently see burn cases following Voodoo rites(12).

The question arises on the basis of the examples cited as to whether the phenomenon of possession is a form of psychiatric disorder or merely a culturally acceptable patterned role playing. The *hungan* enters into a well-controlled, learned, complex and refined, self-induced trance, through autosuggestion, probably on the basis of a personal propensity. In the *hunsi* it has the quality of a dissociative state precipitated and reinforced by a highly charged emotional atmosphere accompanied by an excessive barrage of sound, light and drug stimuli. The last type cited, that of *bouffée délirante aigue* would seem to represent a disorganizing psychotic illness in a culturally alienated individual. These three different explanations, although somewhat reasonable in themselves, fail to consider the unifying cultural aspects of this phenomena. If in Haiti all such behavior is explainable in terms of a single notion of spirit possession, then any discussion of possession should perforce include such a unifying cultural insight.

A concept of a culturally recognized and accepted way of "going crazy" would seem to best incorporate both sets of notions.[3] From this viewpoint the role of the possessed is a culturally sanctioned and governed role, applauded in some circumstances (as in ceremonies), vaguely tolerated in other situations (as in market places), and frowned upon or condemned in other contexts and when differing in degree (as in forms of *folie*. It is a role offering opportunity for the expression of much repressed and suppressed feeling and thought. It

[3] The concept of a culturally acceptable form of "going crazy" was suggested by Linton's remarks on "patterns of misconduct"(9) and Devereux's remarks on the borrowing from culture by genuinely ill people "the means for implementing their subjective derangement in a conventional way"(3).

provides the poor, downtrodden and oppressed peasantry with an opportunity to enact the parts of gods, becoming for brief periods lordly, omnipotent figures. For the possessed and for observers who can vicariously participate in the possession of others and share the good fortune of being in the company of the gods, possession is a cathartic and spiritually uplifting experience.

Indeed from an early age the peasant child is exposed to ceremonial possessions. He is made aware of the prestige of the *hungan* and the possessed. He sees how applauded are the possessed and learns of their good fortune. Observing the possessions of his elders, a Haitian peasant child grows up with the hope that some day he too will be possessed. As one well educated Haitian told me: "Everyone in Haiti is trying to catch a *loa*"(5). It is obvious that for the non-literate, uneducated peasant "catching a *loa*" by possession is far easier than it is for those more educated, intellectual and sophisticated.

We have presented evidence suggesting that possession is a learned pattern of role playing. The selection of roles and the appearance of the possession are seen as dependent on personal factors. The range of *loa* is so great that a great number of patterns are acceptable as *loa* possessions. This fact accounts for the recognition of the possession in non-Voodoo adepts such as Maya Deren and for the frequent confusion of hysterical or psychotic behavior with possession. Although selection of this role suggests that the role is compatible with the possessed person's personality, it is not in itself sufficient evidence for making a clinical pychiatric diagnosis. The hysteric or psychotic cannot however control the onset, the extent and the completion of his uncontrollable behavior as can the possessed.

The impromptu nature of ceremonial behavior further suggests the conscious role playing aspects of possession. There is frequently much personal imaginativeness expressed by the possessed and much interplay with the congregants who join in the merrymaking, solemnity or other prevailing moods of the ceremonies. The same individuals are possessed year in and year out by the same *loas*. Occasionally an individual is possessed by several different *loas* in the same evening but this too is characteristic for the specific individual. Each adept is identified with a specific *loa* or behavioral pattern from the time of his or her first possession and it is truly rare for an individual to become possessed out of context, possession being considered expected behavior for ceremonials only.

According to most natives the *loas* prefer "to mount" people who are most like themselves. Thus aggressive individuals are mounted by stormy *loas* and passive mild mannered individuals by gentle and friendly *loas*. Occasionally the opposite takes place as if by "reaction formation." Metraux in his recent work has suggested a number of points which argue against the dissociative quality of the possessions(13). He has pointed out such things as the retention of memory of events during the possession, the self protective caution against bodily harm during possession and the expression of feelings by the *loa* consistent with the possessed person's personal attitudes towards others.

Conclusion

Possession as seen in Haiti is a culturally sanctioned, heavily institutionalized and symbolically invested means of expression in action for various ego dystonic impulses and thoughts. It provides a behavioral outlet for much of the impoverished and suppressed peasantry of Haiti. For those who are Voodoo devotees it provides legitimized public roles for private repressed impulses and needs. It serves different needs for different people. For the *hungan* it provides a flexible and recognizable set of ideas which makes possible the translation of private needs into a publically acknowledged religious chosenness. For the *hunsi* it is an opportunity for the expression of behavior and emotions. The last type of individual "possessed by a *loa*" would seem to be unable to channel his uncontrollable impulses into such an acknowledged and useful role for various reasons, usually ones which have alienated him from the mainsprings of the Voodoo cult.

In essence, possession is a useful and culturally sanctioned form of role playing

which serves public as well as private needs and is legitimized only insofar as it occurs in the context of Voodoo and in the correct proportions. For those who are out of touch with Voodoo or for those whose possessions last longer than the ceremonials warrant it is not legitimized and is considered a form of *folie*. The similarity of possession phenomena and psychiatric illness plus the identical explanations for *loa* possession and supernatural *folie* suggests a strong relationship between the two and adds weight to our formulation of ritual possession as an acceptable form of "going crazy."

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PATIENT FREEDOM : A VIEW FROM MICHIGAN

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In the current practice of hospital psychiatry the issue of patient liberty is a pressing and challenging one. The Ypsilanti State Hospital, Michigan, organized a committee under the direction of the superintendent to deliberate and act upon this matter. The crucial concern of this group was that many advances in psychiatry as well as in related fields have forced us to take another look at our administrative policy regarding personal freedom(9).

The state hospital has a long tradition of utilizing administration in the therapy of its patients(2). In the history of the last century one is impressed by the good works of the moral therapists(5). This tradition more recently has been carried on by such men as Myerson(17), Yoder(34), Stanton and Schwartz(24), Wilmer(31), Snow(22), Rees(21), and Jones(10). We have come to see that the milieu in which the patient lives and, in particular, his emotional interrelationships, constitute the hospital restitutive process(16). The committee formed was multidisciplinary and had the obligation to call upon all the resources of this large modern hospital to carry out its functions.

In the past the philosophy of the hospital had been to grant ground liberty to nearly one-third of its patients. Decision to award of this privilege came from the morning medical and nursing staff meetings' consideration of a request by the patient's physician. Home visits were initiated by the relatives but were also considered by this staff. Intermediate areas of freedom were handled on a fairly informal basis, referring to the patient's physician for individual decisions.

A study(7) of the hospital discharge records revealed a high degree of personal caprice in the outward movement of patients to the community. Also, pressure from the increasing demands of our urban area forced us to consider some method of speeding the turnover of the hospital population. We were to find some system which would effect more carefully planned patient movement but still maintain and increase the therapeutic character of our milieu.

An extensive survey was made of literature dealing with patient freedom in state hospitals(32, 3, 30, 29, 4, 25). Some writers felt that an open hospital was desirable; however, their reasons lay in humanitarian and not therapeutic ideals. Others found advantages in the closed door arrangement. The committee was hopeful that it could find some way that would give the best of both systems, and avoid damage to the milieu structure already developed in our hospital. We contacted 16 other large state hospitals whose problems were similar to our own. All of the hospitals contacted seemed impressed with the need for a solution better than simply opening or closing the doors. All of them had found some partial solution, but were not completely satisfied. Two hospitals in Ontario, Canada, tended to have views comparable with those prevailing in Michigan. Hospitals in New York and California stressed the open features while those in Pennsylvania, Michigan, and Illinois tended to be more conservative. One hospital in Minnesota strongly supported the open ward philosophy. However, the use of open hospitals brought some very readily admitted problems. There were difficulties in training the staff, in keeping patients in therapy, and a large increase was needed in the facilities provided for patients with freedom. Those not embarking on an open hospital operation had problems of limiting patient freedom more than was necessary; they were being forced to find partial solutions for individual patients who really needed an open hospital. Our group was impressed with the reply from the Menninger Foundation, whose philosophy is that freedom should be given as a prescription for therapy.

After considering this problem for a period of months we embraced neither the

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open nor the closed door philosophy. We began to plan for a milieu which would give our patients experience and practice in social living: if we should open our doors they would open to a better adjustment for the patient in the community. In planning this we established 4 major principles.

First was reinforcement of the doctrine already current in the hospital practice that socially responsible behavior was required from the patient. Secondly, the patient's governing body, the patient-council, was to be integrally involved in demanding reasonable conduct from a person receiving liberty. Thirdly, the area of local control of our liberty program required extension. This in practice would give the ward staff a larger number of techniques by which to foster useful social behavior as well as a significantly responsible task for patient-council assistance. Fourthly, we considered our American socio-political structure, which is a composite of personal responsibility, local control and group action for many personal goals. This process is an impelling civilizing factor in our society. Staff-patient organization could make a structure rewarding behavior by modelling such a system. This was effected by the use of a multiple card pass system giving graduated amounts of ground freedom according to individual need.

The types of such cards recommended were: *a.* Therapy card; this card would be granted at the ward and patient-council level. Considerable arbitrary restrictions would be placed on it, but it would be available to the patient upon admission. As his social responsibility increased, further freedom could be considered. *b.* Ground privilege card; this would offer to a suitable patient essentially an open hospital setting, even permitting the use of keys in closed parts of the hospital. Freedom outside the hospital would be considerably restricted. *c.* Honor card; this card would permit an almost unlimited degree of freedom in an effort to rehabilitate the patient. The hospital would be a stable base of operation, which could be used as a day hospital, night hospital or a combination of these as the patient's rehabilitative program necessitated. This card would be limited temporarily to destroy its reward value for simple hospital adjustment.

Discussion

Placing this program into effect was a prolonged process in a large organization. Of the one thousand staff nearly all were consulted. We did this by personal contact, talks over coffee, in hospital publication of ideas, full dress staff conferences, and briefings of staff by the executive group. Finally, we published a manual giving a complete summary of our work. This careful preparation led to relatively easy acceptance of the plan. When the time came for official inception, active agitation had been initiated by staff to hasten formal executive approval. From the beginning of the operation of the program a major complaint was that it had not gone quite far enough; surely we could do more than this.

Current social psychiatric literature would confirm this major complaint. However, we were very mindful of making only one solid advance. It would be unheeding to plunge without consideration of the hospital as a community with many diverse social forces. Just as unheeding would be to forget the serious import of the concept of mental disorder as a product of social structure. Our attempt was to present a compromise permitting further social development. In creating this portion of a therapeutic milieu we were gratified by the ability of staff-patient groups to seize upon the concept of local control. The best example was a partial opening of geriatric wards simply by granting cards to all patients on the ward.

Perhaps the greatest finding coming from this study has been that patient freedom is only one portion of a total hospital milieu. For patient freedom to be meaningful, the hospital must supply an area in which the patient learns to live normally. Our total program will not be effective until we have individual decision of each patient's individual day with the patient an active participant in decision. Committees are currently working with this problem.

Summary

A statement of policy regarding patient freedom is given by a Michigan hospital. It

is the result of long and considered planning. We have considered both the open and the closed door concepts. In our opinion both present major defects. The basic defect of the open door is "open to what?" or "for what purpose?" The defect of the closed door is that it is not only inhumane but also is not so useful in getting a patient well. We are now attempting to institute a policy that will hopefully combine elements of social living into therapy and rehabilitation. To date, in our setting, the policy appears reasonably successful.

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PSYCHIATRIC DISORDERS AND MYXEDEMA [1]

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Alterations in mentation have been recognized as characteristic of myxedema since Gull's original description in 1874(1). Delirium, depression, paranoid delusions, and hallucinations were reported as occurring in various combinations by the Committee on Myxedema of the Clinical Society of London in 1888; all their 109 advanced cases evidenced slowing of thought processes and 50% had at least one psychotic manifestation(2).

During the succeeding 60 years case reports of myxedematous psychosis emphasized the clinical syndromes and differential diagnosis(3-6), pathologic picture(7), occurrence after exophthalmic goiter(8) or thyroidectomy(9), hallucinations(10), and therapy(11). In 1947, Asher presented his classic "Myxedematous Madness"(12). The previous articles and 1 fictional reference (13) served to stimulate Asher's interest; he reported his personal experience with 13 examples of this malady which he had encountered in a 2½ year period, stressed their clinical similarity to "the so-called functional psychoses," and speculated that psychiatric hospitals were populated with many unrecognized psychotic hypothyroids. Systematic evaluations of all patients in large psychiatric hospitals identified only an occasional instance of such error(14); so that Asher apparently overestimated the incidence of the disease by reason of unique experience.

Subsequent studies have been primarily concerned with the effects of hypothyroidism on central nervous system function. Scheinberg, *et al.*, observed cerebral metabolic deficiencies in myxedema(15). Browning, Atkins, and Wheeler marshalled the clinical and electroencephalographic evidence that myxedematous psychoses are of a delirious nature(16). Reitan found intellectual functions uniformly impaired in myxedema(17); Money reported quantitative evidence of "organic" changes on psychologic testing of patients with hypothyroidism(18).

Most recent reports of psychoses in myxedema have appeared either in the general medical or neurologic literature, and indicate that they are clinical entities of a delirious nature differing little in import from myxedematous coma, heart disease, or neuropathy. The current literature on myxedema psychosis seems to indicate that this condition is readily recognizable as a delirium, that psychiatric care is necessary only when the patient's behavior requires closed ward management, and that thyroid extract plus individualized endocrine and cardiac attention constitute the only specific treatment.

Our recent experience with the 3 patients described in detail in this report has demonstrated to us that the psychiatrist must be always on guard that patients may appear clinically depressed or delirious with few, if any, of the stigmata of the underlying myxedema. In addition it seems evident that the mood, behavior, and thought disturbances of hypothyroidism which may persist after adequate thyroid substitution can respond to psychiatric somatic therapy.

Case 1.—Mrs. A. W. (St. Louis City Hospital #M-107779), a 57-year-old housewife, was hospitalized April 11 through Dec. 31, 1959. During the preceding 3 years her family had noted a gradual development of lethargy, weakness, marked irritability, loss of interest in all former activities, retardation, anorexia, constipation, 30 lb. weight loss, crying spells, confusion, inability to concentrate, sleep disturbance, total body alopecia, and auditory hallucinations of a threatening nature.

From Nov. 17 to Dec. 17, 1958 she had been in another hospital where physical examinations, routine laboratory work, electrocardiogram, chest and skull x-rays, and lumbar puncture were reportedly normal. No protein-bound iodine or cholesterol was obtained. Diagnoses were involutional psychotic depressive reaction, alopecia areata, umbilical hernia, and ichthy-

[1] We are indebted to Drs. George Ulett, Herbert Rosenbaum, R. Eugene Holeman, and William G. Becke for permission to use portions of their clinical material.

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osis; accordingly, a course of 10 electroshock treatments was administered which reportedly resulted in a significant improvement in activity, appetite, and interests.

These improvements lasted only a short while, however, and the patient was brought to the City Hospital for further evaluation. There was no past or family history of psychiatric or metabolic illness. The patient had had 5 normal deliveries and had reached menopause at age 45. Physical examination demonstrated total alopecia; dull-bloated facies; myxedema of tongue, face, and pretibial regions; prolonged relaxation phase of myotatic tendon reflexes; cardiomegaly; and inability to stand. She was disoriented for time and place, markedly retarded, and deludedly depressed. Immediate diagnosis of myxedema with consequent organic brain syndrome with depressive symptoms was made clinically.

The hemoglobin was 10.2 gm. per 100 ml., the red-cell count was 4.28 M per cm., the hematocrit was 40%, and the white-cell count was 6200 with a normal differential. The serologic test for syphilis was negative. Urinalysis was normal. Serum carbon dioxide, chloride, potassium, sodium, calcium, phosphorus, and alkaline phosphatase were within normal limits. Fasting blood sugar, non-protein nitrogen, total and fractional proteins were normal.

Protein bound iodine was 0.7 micrograms per 100 ml., cholesterol was 560 mg. per 100 ml., radioactive iodine uptake was 4.3% in 24 hours and the basal metabolic rate was –38%. Urinary excretion of 17-ketosteroids was 3.3 mg. per 24 hours and of 17-hydroxysteroids 0.3 mg. per 24 hours. The electrocardiogram demonstrated low voltage in all leads. Chest films revealed generalized cardiomegaly. Lumbar puncture returned clear fluid under normal pressure, without cells, with a protein of 48 mg. per 100 ml., and a chloride of 140 meq. per L. No Werner test for thyroid response to thyrotropin was done.

Treatment with thyroid extract was begun on the fourth hospital day; initial dosage was 1/8 grain per day, and this was increased rapidly so that by the tenth week she received 3 grains/day. At this time the protein bound iodine was 4.9 mcg. per 100 ml., the cholesterol was 272 mg. per 100 ml., and the basal metabolic rate was -14%. Urinary excretion of 17-ketosteroids and 17-hydroxysteroids rose to 14 and 10.3 mg. per 24 hours, respectively. By the fourteenth week the protein bound iodine was 6.4 mcg. per 100 ml.; the cholesterol was 239 mg. per 100 ml.; the electrocardiogram and chest x-rays had returned to normal. The physical manifestations of myxedema and the disorientation had also cleared by the third month; however, she remained markedly depressed and retarded—so much so that it required 2 hours to perform the mental status examination. Methylphenidate hydrochloride (Ritalin), phenelzine dihydrogen sulfate (Nardil), and imipramine (Tofranil) were administered without improvement; then a course of 12 ESTs was given during the seventh hospital month. Improvement was rapid; the patient was entirely well at discharge. She was maintained on 3 grains of thyroid daily and was well at follow-up 4 months after discharge.

DISCUSSION

The depressive syndrome was so marked in this case that other physicians treated her initially with a course of 10 ESTs. Five months later the diagnosis of myxedema with secondary chronic brain syndrome was made on clinical grounds, and confirmed by thyroid function tests.

Both the thyroid deficiency and the disorientation were corrected by substitution therapy; however, after 5 months of euthyroid state there had been no alteration in the retarded depressive syndrome. A course of 12 ESTs resulted in complete clearing of the retarded depression. This response has been reported in organic depression persisting after elimination of bromide intoxication (19); and there is a general statement concerning such responses in myxedema in the *American Handbook of Psychiatry* (20) without data, however, or textual reference. This case would appear to be a specific documentation of the effectiveness of EST in persistent psychiatric manifestations after the myxedematous patient becomes euthyroid by substitution therapy.

Case 2.—M. G., a 59-year-old white widow, was admitted to Renard Hospital on Dec. 19, 1959 and was discharged Mar. 15, 1960. She and her family maintained that until 8 months prior to admission she had been "an entirely well, happy and very active woman." At that time she began to feel nervous, anxious, and depressed. She felt guilty and was convinced that she had committed some terrible wrong; when an oil well was brought in on her unproductive 50-acre farm she felt "even more hopeless." She developed severe anorexia with nausea and some dysphagia at food ingestion; she lost approximately 35 pounds in the 6 months prior to admission. Severe constipation required "mineral oil nightly in order to have

bowel movement even twice a week." It required large doses of barbiturates to enable her to sleep 2 to 4 hours nightly ; in spite of this medication she awakened very early with symptoms of agitation, overwhelming fear and hopelessness, visual blurring, palpitations, tremor, "smothering," and inability to concentrate. Retardation became so marked that she "spent as much time as possible in bed," frequently 20 hours a day ; she had lost interest in all her previous affairs and complained of feelings of profound weakness. She also was preoccupied with a "band of numbness around the waist." Ten days before referral she had unsuccessfully attempted suicide by ingesting phenothiazine tablets.

Six months prior to admission she had been hospitalized elsewhere for 1 week. Her complaints were then of nervousness, depression, sleeplessness, and loss of interest. Workup revealed a small asymptomatic hiatus hernia and fluctuating glycosuria which disappeared as she lost weight rapidly.

The patient and her relatives maintained that she had been oriented and alert throughout her illness.

Two years earlier Mrs. G. had been hospitalized for acute cholecystitis and recovered completely following cholecystectomy. There was no other past history of hospitalization, significant illness, or medical attention.

The patient's father was a lifelong alcoholic who died in his 70's ; her mother died at 73 of a cerebrovascular accident. Family history of other psychiatric or endocrine disorder was denied.

Physical examination revealed a pale, wasted, graying, agitated, depressed female who appeared at least 15 years older than stated age. Vital signs were normal. Her facies seemed less wasted than extremities ; the skin was pale, dry, of normal turgor, and hung from her extremities in great folds. Her voice was somewhat hoarse, of normal pitch and her hoarseness seemed to clear after drinking water. There was moderate kyphosis and increase in anterior-posterior chest diameter but heart and lungs were otherwise clear. Mrs. G. was able to move about unaided ; but she evidenced a shuffling-propulsive gait, gross tremor, mask-like facies, drooling and adiadokokinesis. There was no cogwheeling rigidity or abnormality of myotatic deep tendon reflexes. On rapid rising from recumbent position she complained of faintness and dizziness ; at these times blood pressure fell from a systolic of 140 and a diastolic of 80 to a systolic of 60 and a diastolic of 0.

Careful mental status examination revealed Mrs. G. to be well oriented. She was tearfully depressed and admitted constant suicidal thoughts. Her fund of general information, recent and remote memory, insight and ability to reason and abstract were normal. There was no evidence of confusion, thought disorder, hallucinations or delusions (other than depressive ones).

Laboratory determinations revealed normal blood counts and urinalysis. The serologic test for syphilis was negative. Blood urea nitrogen was 15 mg. per 100 ml. Fasting blood sugar was 213 mg. per 100 ml. Protein bound iodine was 2.8 microgm. per 100 ml. Cholesterol was 452 mg. per 100 ml. Twenty-four hour radioactive iodine uptake was 7.7% before and 6.9% after administration of 10 units thyrotropin daily for 4 days. Basal metabolic rate was –9%. Serum bilirubin, cephalin-cholesterol flocculation, thymol turbidity, total protein, albumin-globulin ratio, calcium, phosphorus, alkaline phosphatase, potassium, sodium, chloride, and carbon dioxide combining power were all normal. Lumbar puncture was normal but for a cerebrospinal fluid protein of 147 mg. per 100 ml.

Skull x-rays revealed calcifications of the internal carotids bilaterally ; chest x-ray demonstrated only healed fibrocalcific tuberculosis of the left hilum and left lung. Cervical, thoracic, and lumbar spine films demonstrated osteoporosis, advanced osteoarthritic lipping with some cervical bridging and encroachment on root foramina, and generalized calcification of major vessels. Electrocardiogram showed low voltage throughout all leads. Electroencephalogram demonstrated "7-9/second basic resting occipital frequency, reflected anteriorly ; somewhat slowed for age 59."

The initial impressions were that Mrs. G. was psychotically depressed, that she had some residual phenothiazine intoxication with parkinsonian features. On the third hospital day however, she became quite confused and was thereafter, disoriented for time and place at least a portion of each day until the protein bound iodine became normal. Shortly after this alteration in her mental status was noted the protein bound iodine and cholesterol determinations were available and the proper etiologic diagnosis of myxedema became evident.

Benztropine methane sulfonate (Cogentin), 1 mg. b.i.d., had been administered for the parkinsonism during the 3 days prior to the onset of the confusional state. The parkinsonism improved markedly under this medication and remained so even though the drug was discontinued immediately.

Thyroid extract was begun in a dosage of ¼ grain daily upon completion of the Werner

test; this dosage was increased weekly by ¼ grain increments until daily dosage was 2 grains at which time the protein bound iodine was 6.0 microgm. per 100 ml. and cholesterol was 310 mg. per 100 ml.

Fasting blood sugar remained in the range of 235-300 mg. per 100 ml.; urine sugars were negative until thyroid substitution began at which time glycosuria of trace to 3+ were irregularly found on regular quantitative determinations. Treatment with 1.5 gm. tolbutamide (Orinase) daily resulted in complete disappearance of glycosuria; during the 4 week period prior to discharge the fasting blood sugar was found to be 160 mg. per 100 ml., with 234 and 104 mg. per 100 ml. found at 10 a.m. and 2 p.m. respectively.

During her hospital course the patient gradually became oriented and alert, but developed a perseverative ruminative concern with numerous somatic complaints attributable to her generalized arthritis, and generalized arteriosclerosis. For example, she would complain repeatedly of back ache, chest pain, extremity pain, dizziness with accompanying postural hypotension and anxiety over all these symptoms. Nevertheless her depressive delusions cleared. She required constant encouragement and assistance in occupational therapy and personal toilet. She was reluctant to leave the hospital and its well regulated supportive schedule. She denied depressive feelings concerning her return home, but it was obvious that she would have preferred to stay in the hospital indefinitely.

On follow-up evaluation via phone calls to relatives 6 months after discharge her condition was essentially unchanged; that is she was fully oriented, alert, and much more active. She had never returned to her old active cheerful state, however, and continued with multiple somatic complaints. Repeated attempts to have her return for more specific re-evaluation were unsuccessful.

Discussion of this complex case is in large measure speculative. It seems clear, however, that the onset of her illness was approximately 8 months prior to her hospital admission, that depressive symptoms appeared almost immediately, and that she developed manifestations of delirium only after hospitalization. Her confusion and disorientation appeared only after 3 days treatment with methanesulfonate, a drug which has been known to induce delirium in others (21). Serious clinical consideration of myxedema occurred only after the delirium was recognized. The diagnosis was made on the basis of laboratory data. Treatment with thyroid extract corrected the myxedema, the delirium, and the severe depressive delusions; but she continued to complain perseveratively of multiple somatic complaints, especially those related to her arteriosclerotic postural hypotension and generalized osteoarthritis. These persistent complaints plus her failure to return to her premorbid cheeriness have led us to wonder whether a short course of electrotherapy might not produce the additional therapeutic improvement described in case 1; thus, it is unfortunate that we have not been able to obtain more adequate follow-up.

Case 3.—H. R. L., a white housewife aged 42, was admitted for the second time to Renard Hospital on Dec. 28, 1959 and discharged Feb. 5, 1960.

In Oct. 1945, she had consulted her private internist for symptoms of depression, crying spells, hyperventilation, multiple phobias including fear of insanity, feelings of hopelessness and anergia, anorexia, sleep disturbance, and ruminations concerning separation from her husband in Naval Service. Physical examination was entirely normal. Impression was "psychotic or psychoneurotic change." She was treated with elixer of phenobarbital and in 2 months was recovered.

In Feb. 1947, she complained of easy fatigability, had a lemon tinted skin as positive physical finding, and evidenced a mild anemia (hemoglobin, 9.5 gm. per 100 ml. and red cell count, 3.5 M per cm.) which responded promptly to iron-liver extract therapy.

During continued follow-up she repeatedly described symptoms of nervousness, dizziness, weakness, cold sensitivity, nausea, and blurred vision. In Mar. 1949, a complete evaluation was stimulated by a thickened, scaly change in the skin; her hemoglobin was 11.5 gm. per 100 ml. with slight macrocytosis (mean corpuscular volume was 107 cubic micra), the bone marrow was normal, the icterus index equaled 25, urinalysis was normal, non protein nitrogen was 40 mg. per 100 ml., and the basal metabolic rate readings were −12 and −16%. No cholesterol was obtained. A diagnosis of hypothyroidism was made and thyroid extract was begun; initial dosage was 3 grains per day, and in 2 months she felt "entirely well."

The patient had maintained herself on 2 grains of thyroid per day until her first Renard Hospital admittance of Mar. 1, 1958 through Mar. 28, 1958, when she gave a 2 week history

of anxiety, worry, anorexia, sleep disturbance, depression, agitation, irritability, psychomotor retardation, and crying spells. She had quit her job and felt her life was hopeless. Physical examination was unremarkable but for the mental status which demonstrated a sad, retarded, tense, anxious, tearful woman who exhibited a fear she had become insane. She was oriented, with normal memory and abstraction, but had some difficulty concentrating. Urinalysis, complete blood counts, cardiolipin, electrocardiogram, chest and skull x-ray films were normal. The impression was psychotic depression, and she responded to a course of 6 electroconvulsive treatments. At discharge, her depression had cleared; thyroid was discontinued after a basal metabolic rate of +26 and +30% was obtained. Prior records were not available at that time; protein bound iodine and radioactive iodine uptake were not obtained.

The patient remained essentially well for about 1 year; then, about 8 months prior to the second Renard Hospital admittance she gradually became "less peppy, and then rundown and weak." She became anorectic and lost approximately 15 pounds; she also became quite constipated, anergic, exhausted, and unable to carry on her usual activities. Her memory gradually deteriorated and she complained of difficulty concentrating. Her husband considered her to be again depressed. She had complained of irregular menses, and seemed convinced that thyroid resubstitution would correct this as well as the anergia. On the day of admittance she became confusedly paranoid and called the police to protect her from the family whom she thought were "getting rid" of her. The past and family history was otherwise noncontributory. Physical examination revealed classical features of myxedema: thick, coarse hair; sparse eyebrows; deep-hoarse voice; thick-scaly skin; and markedly prolonged relaxation phase of the uniformly brisk myotatic reflexes. Vital signs were normal. On mental status she was oriented as to time-place-person but seemed confused as to the role of the examiners; her memory was impaired, but evaluation was not precise due to her inability to concentrate as well as her marked retardation. There was no apparent mood depression. Laboratory evaluations revealed a hemoglobin of 8.9 gm. per 100 ml., white cells numbered 8700 per cubic mm. with a normal differential count. Urinalysis revealed a trace of albumin and a few white cells. Residual urine was 100 cubic ml. and produced a luxuriant growth of E. Coli sensitive to tetracycline *in vitro*. Serum cardiolipin was nonreactive, cholesterol equaled 448 mg. per 100 ml., protein bound iodine was 1.9 microgms. per 100 ml., fasting blood sugar was 75 mg. per 100 ml., blood urea nitrogen equaled 12 mg. per 100 ml., radioactive iodine uptake was less than 1% in 24 hours. Chest x-ray was normal. Electrocardiogram demonstrated low voltage throughout all leads. Treatment consisted of simultaneous administration of thyroxin and electroshock. The thyroxin was given first in 0.1 and then increased to 0.25 mg. daily dosage; electroconvulsions were administered 3 times per week for a total of 8 treatments. Activity increased markedly within 2 weeks; and the protein bound iodine rose to 6.1 microgms. per 100 ml. after 1 month. The urinary infection cleared with oral tetracycline; and iron-multiple vitamins were employed as adjunctive therapy. She was discharged on 0.25 mg. thyroxin daily and was well 3 months later.

DISCUSSION

The disappearance of Mrs. L.'s psychiatric syndrome without thyroid medication in 1945 and the response of the 1958 exacerbation (acquired while on 2 grains of thyroid per day) to electroconvulsive treatments suggests very strongly that this woman's previous psychiatric illnesses were probably manic-depressive reactions, unrelated to her hypothyroidism. Treatment of the latest psychosis with thyroid alone, initially, would have been preferable; however, her physician's experience with her in 1958 led him to utilize simultaneous electroconvulsive treatments. The possible resistance of depressed affect to thyroid (as in case #1) could not, then, be observed; but complete recovery required only 30 days.

Conclusions

Asher stated that in "myxedema madness" the physician's proper function is to recognize the hypothyroid state(12). Although he "made the diagnosis on the appearance of the patient and not on mental symptoms —you don't diagnose typhoid by the type of delirium," he also emphasized that it is often exceedingly difficult to make an accurate diagnosis for "the signs and symptoms are not specific to myxedema and any or all may be absent in a particular case."

We have presented clinical reports on 3 unusual myxedematous patients. The first remained retarded and depressed after a 5 months period euthyroid and fully oriented as a consequence of thyroid replacement;

a course of electroconvulsive treatment dramatically cleared her syndrome and she has remained well. This further documents the report noted above of such success with electroconvulsive treatment(20); and we advocate its trial in other patients with persistent psychiatric symptoms after return to a euthyroid state.

The second patient presented as a classic depression in a clear sensorium but became disoriented after 3 days of methanesulfonate therapy for phenothiazine intoxication. She improved markedly with thyroid substitution but persisted in multiple somatic complaints; we have been unable to obtain personal follow-up re-evaluation in order to ascertain the advisability of electroconvulsive treatment for persistent retardation and somatic ruminations.

Case 3 had an apparent manic-depressive depression in 1945 which cleared spontaneously; she developed hypothyroidism in 1949 and was treated with 2 grains thyroid daily until 1958 when a second severe depression cleared with ECT. Following this hospitalization thyroid was discontinued and 18 months later she returned with a myxedematous depressive syndrome which responded quickly to simultaneous administration of thyroid and electroconvulsive treatment. We would have preferred to have reserved electroconvulsive treatments for residual depressive manifestations; however, the clinical response to simultaneous treatment was exceedingly rapid.

Summary

A brief survey of the literature on psychiatric symptoms in myxedema is followed by 3 case reports demonstrating that "Myxedema Madness" may present as seemingly specific organic or functional psychoses, and that psychiatric care may prove vital in the management of these patients. The successful use of EST in psychiatric symptoms resistent to thyroid substitution in myxedema is reported. The further evaluation of EST in this circumstance is suggested.

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NURSING WARD THERAPY AS AN ALTERNATIVE FOR RESTRAINT

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A century ago, John Conolly showed that all psychotic patients can be treated safely, with good clinical results, without any form of physical coercion. Furthermore his nursing techniques were fully described as early as 1839(2). Although such transparent rationalizations as the claim that restraints are sometimes beneficial(3, 7) would not be found in current writings, a traditional notion has been tacitly accepted that mechanical restraints are indispensable tools, even if less desirable ones, for the protection of the patients themselves. It is said that they are still needed because other therapeutic measures are inadequate in ward emergencies. A recent revival of interest in abolishing restraints (1, 5, 6, 11, 12, 15) points up the dearth of technical information that could be put to use in actual ward practice.

In this report we describe the nursing techniques as they were evolved in the process of eliminating restraints in an experimental setting. Our first concern was to see whether mechanical controls could indeed be completely abolished on a ward accommodating severely disturbed patients under the typical conditions of service. Must additional nursing care or perhaps new types of psychiatric care be added? What alternative measures such as chemical sedation are required? What practical problems among personnel accompany such a deep change in approaching assaultive patients?

The 65 male patients on our study ward were the most refractory, agitated, combative, and suicidal patients in a 1600-bed Veterans Administration psychiatric hospital. The day shift team includes 1 psychiatrist, 1 clinical psychologist, 1 social worker (part-time), 1 recreation leader, 3 nurses, and usually 10 aides (nursing assistants). Except for nurses and aides, the other staff members were responsible for another 65-bed unit located on the first floor of the same building. Intermittently, graduate nurses were active on the ward as part of an advanced educational program. No additional personnel were assigned and no additional funds were requested.

A program of "Nursing Ward Therapy," stressing on-the-spot support and guidance of patients by nurses and aides(13), had already been established on this ward. In Nursing Ward Therapy as practiced here the following aspects are most prominent and indispensable: 1. The nurse is physically present in the dayroom with her patients and accompanies them to other places; 2. The nurse responds to the patient's momentary needs, establishes rapport, and judges daily her patient's mood and receptiveness. The framework of the nurses' activities is not scheduled; spontaneity and improvisation are expected. She listens to patients, talks, walks, works, and plays games with them. The aides are encouraged by example and by consent to imitate the nurses' methods of handling ward emergencies. This approach to the patient is designed not only to reduce tension on the ward but also allows a maximum of contact with healthy people skilled in psychiatric treatment. It is assumed that the patient will emulate the nurses and aides and will relearn some of the normal ways of getting along which have been dislodged by psychosis. It should be noted that the ward psychiatrist and psychologist spend much of their time in the dayroom in unstructured contact with patients to create a therapeutic ward climate.

No formal indoctrination in special techniques was offered the nurses or aides but continual encouragement was given by the ward psychiatrist and psychologist, both in periodic conferences and daily informal meetings. The principles of the program were explained to the evening personnel and periodic reports were received from them. Graphs and tabulations of restraint usage were prominently posted in the nurses' office and served as a basis for discussion and a means of motivating the nurses.

The project was planned in 3 phases: 1. The aim was to involve the nurse directly

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in resolving ward emergencies with a minimum of physical control; 2. The focus was shifted to the aides and they were induced to rely on their nursing skill more than ever before; 3. An attempt was made to handle ward emergencies entirely without mechanical control or sedation, relying exclusively on Nursing Ward Therapy techniques.

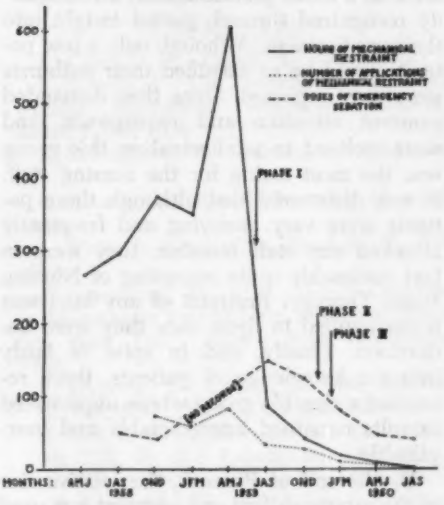
A consistent routine for handling assaults and sudden violent outbursts was introduced as obligatory for the first 6 months (Phase 1). The main feature was an immediate interview by the nurse to decide whether the patient is to remain in restraint and whether a sedative is also necessary (in view of the type of patients, it was an accepted practice for the aides to apply cuffs and belt in extreme emergency before the nurse arrived). The measures decided upon would then be endorsed by the ward physician at the earliest opportunity. The nurse inquired into the circumstances and the likely causes of patient's disturbed states, and instructed the aides as to further management. The aides then could apply the customary restraint (cuffs and belt) in extreme emergency as before. This was done to avoid imposing a sudden change in the aides' traditional role. The Director of Professional Services met with the ward nursing staff to indicate management's interest and to assure the aides that they would not be held responsible for injury to patients caused by failure to use restraints. In the second phase, restraint could not be applied without the nurse's specific order for each instance, even in cases formerly considered exceptional. One month later the third step was added; the nurse was urged to refrain from giving emergency medication. In fact, every instance of restraint had to be reported in a special memorandum to the ward psychiatrist, describing the circumstances and justifying the need.

RESULTS

The use of mechanical restraint, measured in number of applications and in total hours per month declined sharply immediately after the project began. For example, restraints were applied an average of 58 times per month for the preceding 6-month period while during Phase 1 the average dropped to 21 applications. However, the nurses began to use emergency medication quite freely. During a 4-month period before the study, the monthly average of emergency sedation was 38 doses, while during Phase 1, the monthly average dosage rose to 114 doses.

In Phase 3 (8th through 15th month), when attention was turned toward reducing sedatives, dosage dropped to the pre-experimental monthly average of 37.5. This level remained stable for the last 6 months of the study. At the same time the use of restraints continued to decline until it was negligible. Thus through successive stages, mechanical restraint gave way to chemical sedation and this in turn was apparently replaced by Nursing Ward Therapy. A graph demonstrating the changes in restraint usage is reproduced in Figure 1.

FIGURE 1



During the entire period under study the number of altercations, new admissions, transfers to the ward, number of personnel, and dosage of routine medication dispensed remained essentially unchanged. On this ward ECT is used only exceptionally, in brief courses, and never as a maintenance measure. Tranquilizer drugs are prescribed in very conservative doses; for example, acutely disturbed patients typically receive 300 mg. chlorpromazine daily; in extreme

cases dosage may reach 800 mg. for a few days.

To understand better the reasons for patients' disturbed behavior and also as an educational exercise, the nurse's notes and memoranda required for each application of restraint were examined and causes of patient's distress classified. A number of categories of patient or situations requiring restraint were conspicuous. Most commonly assault was prompted by auditory hallucinations. A more complex, but typical situation was seen in homosexual panic states, where patients struck out in response to either hallucinations or provocative, coarse comments by other patients. Rage reactions, seen in brain damaged patients, were the only cases constituting actual physical danger. In one or two cases restraint was applied to protect the patient's own surgical dressing. Other patients were repeatedly aggressive, mainly to gain attention, and often as a bitter protest against an incapacity recognized through partial insight into their predicament. Although only a few patients could be so classified their outbursts were most repeated. Since they demanded constant attention and reassurance, and were inclined to intellectualize, this group was the most taxing for the nursing staff. It was discovered that although these patients were very annoying and frequently attacked any staff member, they were in fact noticeably quite accepting of Nursing Ward Therapy. Restraint of any kind was never applied to them once they were understood. Finally, and in spite of fairly intimate knowledge of patients, there remained a sizeable group whose unprovoked assaults remained unpredictable and inexplicable.

By the end of Phase 3, the relative size of the groups shifted and restraint was used only in cases of organic brain damage, acute alcoholic intoxication, and one or two non-organic cases whose outbursts were still not explained. Practically all instances of restraint took place during the afternoon shift when a single relief nurse, who was unfamiliar with the patients and whose duties included other wards, was in charge.

Discussion and Conclusions

The crucial questions motivating this venture have been: can the traditional mechanical restraints be discarded without greatly limiting the patients' freedom of action by other agents such as chemical sedation? Even if this can be achieved under the conditions of an experimental effort, is it possible to maintain the necessary level of psychiatric nursing during the daily routine?

These issues were identified in the running debate which took place in the early 1800's in England(3, 8, 9, 10, 14), and later in this country(4). Consistently favorable clinical results under a complete nonrestraint regimen were reported (claims that all patients were cured by the new method have a familiar ring). The dramatic improvements were attributed to the carefully devised techniques with which the attendants were instructed to approach the patients in distress(2, 10). The adversaries of this "extreme" in the practice of moral treatment, apparently equally experienced psychiatrists, argued that complete nonrestraint was achieved only by substitution of excessive seclusion(3).

In the first phase of the present study, a similar pessimism must have accounted for the transient increase in emergency medications administered on the nurses' own initiative. Evidently, the nurse's syringe had substituted for the aides' cuffs and belt in an otherwise therapy-conscious setting. Only through additional efforts within the structure of an experiment could chemical restraint likewise be brought under control and its minimum limits explored. The nurses observed for themselves that emergency sedation increased when only one regular nurse was on duty: "I didn't have time to stay with the patient and had to give a sedative instead."

Inasmuch as other relevant variables (new admissions, altercations, number of personnel, use of tranquilizing drugs) remained essentially constant throughout the observation period, the virtual abolishment of mechanical restraints and subsequent reduction of sedative medications must be the result of a still more consistent use of the personal, on-the-spot Nursing Ward Therapy. This particular therapy technique will not occur spontaneously but must be introduced with purpose and direction by those

responsible for the ward. In the final analysis, however, success of such a program depends upon emotional acceptance and genuine interest of psychiatric nurses and aides who work daily with their patients.

The level of restraints and sedative medication may be considered a real measure of psychiatric nursing performance. In this concept of measurement, the ideal level of nursing care is seen when physical and chemical controls are rarely used.

Intentionally the study was conducted in gradual stages to give an educational experience to all participants. In the beginning, the nurses took inventory of the restraint practices on the ward. They had the impression that restraints were not used excessively. They were genuinely amazed at the gross discrepancy between what they had believed and the actual restraint practice. When the study was completed they asked themselves: "Why did we need so much restraint before?" Later, the tabulation of chemical sedation was similarly revealing and instructive. Through the act of administering sedative medications the nurse could fulfill a traditional medical nurse's role. This experimental setting gave the nurse an opportunity to abandon some facets of this role and to appreciate more fully—possibly for the first time—the role of a specialist in psychiatric nursing.

We know from spontaneous comments that both the nurses and aides emotionally repudiated the old ways of running the ward, suggesting confidence in their new skills and the likelihood that the changes would be lasting. We also learned that the continual support and personal interest of those responsible for the ward is necessary. Since restraint, which by itself was a source of ward tension, was abolished, patients became more accessible. After the initial strain of getting used to the new techniques, we have the distinct impression that the performance of Nursing Ward Therapy has become an easier and more rewarding task.

Summary

1. The use of mechanical restraint was virtually eliminated on a psychiatric ward of acutely disturbed, combative patients.

2. This was accomplished in a research setting through successive stages designed to be of educational value to the participants.

3. At first, the nurses tended to substitute chemical sedation for mechanical controls.

4. Through a number of informal talks and formal devices (restraint graphs, obligatory written memoranda for all restraint, *etc.*), Nursing Ward Therapy techniques were finally substituted for both mechanical and chemical restraint. As a result, the ward nurse perceived herself as shifting from a primarily medical role to the role of a psychiatric nursing specialist.

5. Nursing Ward Therapy is presented as the alternative of choice in handling emergencies in large mental institutions.

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TRANYLCYPROMINE [1] (PARNATE) IN THE AMBULATORY TREATMENT OF DEPRESSED PATIENTS [2]

MAX L. LURIE, M.D.,[3] AND HARRY M. SALZER, M.D.

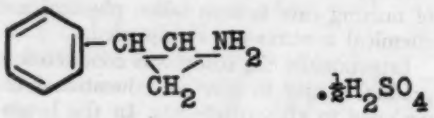
Melancholia is one of the oldest recognized mental maladies and it has been treated with a wide variety of methods and drugs. Depression is everybody's concern since it transgresses the bounds of all the medical specialties as well as constituting a definite socio-economic problem. Even then, the actual incidence of depression is not fully recognized since it often strikes in a mild enough form to masquerade as "vague nervousness" or to be hidden by some dominant and attention focusing somatic symptom.

The introduction of the amphetamines some 20 years ago brought new hope for a cure. In 1939 Dub and Lurie(1) reported the beneficial effects of benzedrine sulfate on the mood and psychomotor activity of psychotic patients. In 1953 Salzer and Lurie (2, 3) studied the effects of a hydrazine, but non mono-amine oxidase inhibiting antidepressant drug, isoniazid. Although the benefits of amphetamines and isoniazid proved limited and consequently disappointing, the door was opened for the introduction of numerous more potent chemotherapeutic agents in the past decade including the large group of mono-amine oxidase inhibitors.

Many psychic energizers of varying efficacy have been introduced in the past few years, but none has been uniformly effective. Some have been beneficial in only a specific type of patient with a specific type of depressive reaction(4). Even then, there often is a discouragingly long interval of several weeks before benefit appears. The present study was undertaken to clinically evaluate a new drug which gave promise of being a more effective therapeutic agent.

PHARMACOLOGY

Tranylcypromine, a non-hydrazine inhibitor of mono-amine oxidase, is trans-dl-2-phenylcyclopropylamine. Chemically it is related to the amphetamines and has the structure



More recently, 10 mg. of tranylcypromine was combined with 1 mg. of trifluoperazine.[4] This product was introduced because of the realization that depression is often accompanied or masked by anxiety(5). Both drugs were included in this study.

MATERIALS AND METHODS

During a 20 month period 84 depressed patients (53 women, 31 men) were treated. Ages ranged from 21 to 79 years. All were ambulatory and were seen in private practice. Of this number, 57 received tranylcypromine while 27 patients received the tranylcypromine-trifluoperazine combination. In most instances the therapy with tranylcypromine was supplemented by small doses of barbiturates or phenothiazines. Several patients originally given tranylcypromine were later changed to the combination drug. The duration of treatment varied from 1 to 19 months except in 5 instances where a side effect forced an earlier termination of therapy. Eight patients received concurrent electric shock therapy while 35 had required shock therapy either for a previous episode or before starting with tranylcypromine. The average duration of the depression prior to therapy was 3½ months. All of the subjects exhibited psychomotor retardation with inability to function adequately from a vocational or social standpoint.

Fifty-one patients had psychoneurotic depressive disorders, of which 26 were endogenous and 25 were reactive. The remaining 33 patients had psychotic depressions, including 8 manic-depressive reactions in the

[1] Supplied as Parnate by Smith Kline & French Laboratories.

[2] Read at the Central Neuropsychiatric Association, French Lick, Ind., Oct. 14, 1960.

[3] Doctors Bldg., Garfield Place, Cincinnati 2, Ohio.

[4] Supplied as Parstelin by Smith Kline & French Laboratories.

depressed phase. Patients with demonstrable organic brain disease or depressive manifestations of schizophrenia were excluded from the evaluation.

During the earliest phase of the evaluation, a few patients received initial doses of 10 to 15 mg. of tranylcypromine a day. It was soon apparent, however, that initial doses of 30 mg. a day produced a much more rapid and dramatic onset of improvement. Consequently most patients received initial doses of 10 mg. of tranylcypromine three times a day, plus appropriate doses of a tranquilizer, usually either prochlorperazine, meprobamate, or a barbiturate. In some patients it was desirable to alter the dosage level relatively quickly, but in general, the initial dosage was maintained for an average of 4½ weeks. Subsequent decreases were made in accordance with the patient's progress but usually not for at least 4 weeks.

RESULTS

The results were evaluated in terms of subjective and objective improvement of the mood and psychomotor state. Symptomatic improvement was sought but, as stressed by Lesse(6), emphasis was placed primarily on the individual's ability to adapt to the routine vocational and social responsibilities of everyday life.

On this basis the results were almost identical in the group treated with tranylcypromine and the group treated with the combination of tranylcypromine and trifluoperazine. Consequently, the results in the two groups will be considered together.

Marked improvement occurred in 46 instances while the results were rated as moderate in 16 others. Ten individuals showed only minimal or transient improvement while 12 showed no benefit after 3-4 weeks of therapy. Combining these results, significant benefit was derived in 62 cases (74%) while 22 cases (26%) were considered failures. Lending credence to these results, and serving as a type of control, was the fact that the percentage of improvement obtained independently by each of the authors in his own series, was virtually identical.

Benefit from tranylcypromine appeared in an average of 9 days when a large initial dose was used. The average with the combination of tranylcypromine and trifluoperazine, however, was 7 days. With both drugs, a few patients began to show signs of improvement after only 2 days of therapy while in some cases, the improvement did not appear until the third week. The delayed response, however, bore no demonstrable relationship to ultimate recovery.

Where the dosage was reduced prematurely and some depressive symptoms recurred, a prompt reversal was achieved when the dosage was temporarily increased. In 4 cases there were relapses 3 to 7 months after therapy had been discontinued. In each instance prompt improvement resulted when therapy with tranylcypromine was reinstituted. Their course was similar to their previous response even though it was usually treated with 20 mg. daily rather than 30 mg. Perhaps this may have been the result of initiating therapy relatively sooner after the reappearance of depressive symptoms.

SIDE EFFECTS

Initially blood counts were made routinely on all patients, but when no deviation from the normal was found in our patients on repeated examinations, nor reported by other investigators(5), this procedure was discontinued. Likewise, no instance of jaundice was encountered nor, to our knowledge, has any case been reported(5).

Most of the patients (62%) experienced no side effects. In 14 instances there were mild, but insignificant side effects. They were similar for both drugs : dry mouth, restlessness, dizziness and insomnia. The latter usually responded quickly when the last dose was given by 3-4 p.m. or when a mild sedative was added. Dizziness was overcome by giving the drug at bedtime, strangely enough, without producing any insomnia. With the combined drug, some drowsiness was also encountered.

More significant side effects included a diffuse macular skin rash which occurred in 5 cases and a severe devastating and disabling headache in 2 cases. The skin rash gradually disappeared when the drug was discontinued and did not require any specific ancillary therapy. The headaches were self limited, lasting only a few hours. They were generalized, very severe, and were accompanied by extreme agitation, restless-

ness, apprehension, and a transient elevation of blood pressure. They occurred after the ingestion of a heavy meal but produced no nausea or vomiting. In both instances they occurred after about 10 days of therapy. In each instance therapy had to be discontinued.

CASE REPORTS

Case 1.—A 51-year-old married man gave a history of mood swings, mostly of depressed nature, since the age of 20. These depressions had become more severe in recent years with each episode requiring hospitalization and electric shock therapy. Even then, improvement was slow and he usually missed 4 to 6 months of work. Chemotherapy was of minimal value in these episodes.

Like all previous episodes, the present one began rather suddenly and was characterized by a severely depressed mood, crying, marked psychomotor retardation, hysterical and impulsive behavior, and insomnia. He took an overdose of sleeping pills, apparently in a suicide attempt, but without any after effects. He was placed on tranylcypromine 10 mg. t.i.d. along with small doses of prochlorperazine and glutethimide. During the first 3 days of therapy, he took an entire bottle of 50 tablets of tranylcypromine at unknown intervals in unknown doses. No untoward side effects were observed. However, therapy was discontinued for one week and then he was again given 10 mg. of tranylcypromine t.i.d., plus a tranquilizer. One week later he showed definite improvement but was still depressed.

After 2 weeks of treatment, he returned to work on a part time basis and within 6 weeks was on a full time basis. About one month after therapy was begun the symptoms had largely disappeared and he was no longer using any sedative. The tranylcypromine was reduced to 10 mg. b.i.d. and was continued for 4 months. It was then reduced to 10 mg. once daily for 3 weeks and then discontinued. When seen 6 months later, he was adjusting well without any recurrence of symptoms.

Case 2.—A 25-year-old married woman gave a history of hysterical outbursts and depressive symptoms of 4 months duration. She was tense, tremulous, restless, and cried frequently. Her appetite was impaired and she had lost weight. She was afraid to be alone because of a fear that she was going insane and would kill her 3 children. She entertained thoughts of suicide, was unable to perform her household duties, and showed marked psychomotor retardation.

She was given the tranylcypromine-trifluoperazine combination, one tablet t.i.d., and 4 days later some subjective improvement was noted. At the end of one week she was less irritable, felt calmer, was eating and sleeping better, and felt less depressed. The drug was reduced to one tablet b.i.d. and she continued to improve. There were no further hysterical outbursts, and all symptoms of depression disappeared. Two months after therapy was begun, the drug was reduced to one tablet a day and her improvement has been maintained.

Case 3.—A 51-year-old nurse gave a history of 5 previous depressions, each of which responded to electric shock therapy.

Her current depression had been treated unsuccessfully with another course of shock therapy and she continued to be despondent and unable to work. The presenting symptoms were anxiety, apathy and pessimism, obsessive erotic thinking, inability to concentrate, and homicidal ideation. The somatic symptoms of insomnia, poor appetite, tachycardia, and tremulousness were relieved by a high protein, low carbohydrate diet. Along with this diet she received various sedatives, two antidepressant drugs, and supportive psychotherapy, but without any significant improvement.

After 3 months of this therapy, and when the patient was feeling that recovery was impossible, treatment with tranylcypromine 10 mg., t.i.d. was begun. Twelve days later she described her attitude as follows: "I felt like my old self again. I felt compelled to do my work." The medication was reduced to 10 mg., b.i.d. Six weeks after tranylcypromine therapy was instituted, she returned to her professional duties.

Because she resented being dependent on any medication, periodically she would stop taking the drug. In each instance, she again became depressed within 7 to 14 days, but the depression was alleviated within 3 or 4 days after resuming the tranylcypromine.

Case 4.—A 59-year-old man gave a history of a depression 10 years ago which responded to a series of electric shock treatments. Another depression 8 years ago failed to respond materially to EST, or to treatment with 12 different antidepressant drugs given over the course of the next 7 years.

When the present study was undertaken, he was significantly depressed, disinterested, forgetful, unable to concentrate, seclusive, and given to "day dreaming." Tranylcypromine, 10 mg., t.i.d., was administered.

Nineteen days later, he was greatly improved. He stated, "It took the treatment two weeks before it had any effect. I could feel it wanting to work. It seemed like there was a

closed curtain there. At the end of two weeks I began to penetrate that a little bit. At the beginning of the third week I noticed the improvement was prolonged, and each day it lasted longer until I felt well all day."

The dosage of tranylcypromine was reduced to 10 mg. b.i.d. on the 19th day. During the next 12 months repeated efforts were made to decrease the dosage further, but this proved impossible without experiencing a return of the depressive symptoms. At the end of one year of therapy he continued to be symptom free, but was still taking 10 mg. of tranylcypromine b.i.d.

Discussion

The 74% improvement rate with tranylcypromine represents a significantly higher improvement rate than might have been expected in a similar period of time from psychotherapy alone. Likewise, the rapid onset of improvement in 7-9 days, although not as rapid as the 5 day average reported by Petersen(7), constitutes a specific drug effect.

The distinctly more rapid onset of benefit with the tranylcypromine-trifluoperazine combination in 7 days versus 9 days with tranylcypromine itself, despite the concommitant use of barbiturates or phenothiazine derivatives with the latter, suggests that part of the therapeutic result may be due to the action of trifluoperazine. However, the combination drug was found to produce benefits not obtainable from either tranylcypromine or trifluoperazine alone. The combination also eliminated the agitation and restlessness often encountered during therapy with tranylcypromine alone.

In 4 cases it has proved impossible to discontinue the drug without the recurrence of depressive symptoms, although the drug has been taken in small doses for as long as 12 months. Each time this was attempted, these patients found that only restarting tranylcypromine would help them.

Our experience has indicated that the best and most dramatic results are obtained with an initial dose of 10 mg., t.i.d. The drug should be decreased slowly, usually over a period of several months. This tends to minimize a recurrence of any of the depressive symptoms.

Of the 22 cases who failed to respond to tranylcypromine, 9 failed to respond to any subsequent form of therapy while 7 patients recovered on therapy with other antidepressant drugs or EST. Contact was lost with the 6 remaining failures.

The incidence of improvement in each of the diagnostic sub-groups of depressions was analyzed. This failed to reveal any statistically significant selective effect of the drug.

Summary and Conclusions

Tranylcypromine is a safe and potent mono-amine oxidase inhibitor which, when used in combination with sedatives, produced improvement in 74% of 84 ambulatory depressed patients of both psychotic and psychoneurotic types. The onset of benefit was rapid, occurring within an average of 7-9 days. The improvement was more rapid and more dramatic when the drug was combined with trifluoperazine. The incidence of significant side effects was low. No case of blood dyscrasia or jaundice occurred in our series. Some of these cases have been followed for over one year and have had no relapse.

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RESULTS OF SIMULTANEOUS ABRUPT WITHDRAWAL OF ATARAXICS IN 500 CHRONIC PSYCHOTIC PATIENTS

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For a number of years most psychiatric hospitals have given various forms of tranquilizers in varying doses to many patients. Psychiatrists have made all possible checks to assure themselves that the patients were not being harmed and over the years little evidence of damage has been found. The reports of disturbing, or even dangerous, side effects have become fewer and in many of the newer tranquilizers they are even less frequent than in the older ones. Nevertheless, one wonders if the continued long-term use of these drugs might not some day cause unexpected and even dismaying clinical results. From the standpoint of the clinician it would seem logical to suspend the drugs for a period from time to time if no harm will come to the patient.

A great deal of work has been done on the effects of the withdrawal of drugs. Both gradual and abrupt withdrawal have been attempted. Usually these studies have been with comparatively small groups which were made the subject of intensive clinical or psychological observations and often these have been balanced by well conceived and well controlled groups. We have seen no studies involving a relatively large number of patients who had withdrawal of their ataraxics more or less simultaneously. It was felt that information was needed by the clinician about the results of such group withdrawals, both in the individual patient and the effect on his environment.

When drugs were removed abruptly, particularly if they had been given in sizable amounts over a long period of time, there had been reports of disturbing reactions(1). On the other hand, we have on many occasions seen patients abruptly removed from large doses of tranquilizers because of intercurrent medical or surgical necessity, or because the patient may have eloped without any serious symptoms resulting.

We have given considerable thought to the contradiction between the facts in the preceding paragraph and the reports of severe withdrawal symptoms. It seems that the most logical explanation was that any research project necessarily involves a certain amount of expectancy, and this might account for the discrepancies. For example, one author reports 17 occurrences of morphine-like withdrawal symptoms in 28 patients(1). He had given these patients placebos, but he was never able to persuade them that these were not a new and more powerful drug. Other series have been studied with elaborate and well conceived batteries of psychological tests and it is entirely possible that the psychotic might well take these to be a sign of either hate or of affection.

With the above in mind we conceived the project of removing a relatively small number of patients from tranquilizers by simply stopping the drugs. This was done with a minimum of discussion with either patients or personnel. We selected a hospital industry ward and a maximum care ward. These 2 wards adjoin each other and the staff physician in each case has frequently served the other ward and was rather well acquainted with the patients and the personnel, and was in turn well known to them. All of the patients on these two wards who had been given tranquilizers continuously from 2 to 5 years and who were considered in satisfactory control had the drugs removed. There were 33 patients chosen on the maximum care ward and 54 on the hospital industry ward. Since the number of patients involved was small, it was felt that one or the other of the 2 staff physicians could always observe them closely. The drugs withdrawn were chlorpromazine (Thorazine) in 40%, prochlorperazine (Compazine) 23%, trifluoperazine (Stelazine) 17%, and in lesser percentage, thioridazine (Mellaril), reserpine, Tentone, and meprobamate. The trial lasted for 5 months, beginning in December, 1959.

Because of the opportunity for close ob-

[1] VA Consolidated Hosp., N. Little Rock Div., Little Rock, Ark.

servation we are giving the figures for this group in some detail.

At the end of 5 months the maximum care ward still had 35% of the original group off tranquilizer medication; the hospital industry ward 45.5%. On this ward the first patient was returned to treatment in 2 days, and the last patient to be returned was restarted on the 117th day. Thirty-four percent of the hospital industry ward patients were returned between the 7th and 8th week, and 62% of those returning on this ward re-commenced medication between the 7th and 15th week. Only 1 patient returned later than the 15th week. On 68 Upper, the more acute maximum care ward, the first case returned to treatment on the 6th day, and 27% returned between the fourth and sixth week. One case lasted 152 days before returning. On 68 lower, the less acute maximum care ward, the first case did not return to medication until the 5th week and the last return occurred within the 22nd week. The largest number, 30%, returned between the 5th and 6th week.

On both wards the most usual symptoms requiring the re-starting were hyperactivity, muteness, loss of pride in personal appearance, decreasing contact and threatening behavior and/or verbalizations. A few patients either commenced or increased hallucinations.

The most severe symptoms occurred in 2 patients, and were almost identical. Both were on chlorpromazine, one was receiving 1200 mgm. a day, and the other 300 mgm. Both complained of malaise and insomnia within 24 to 48 hours after the drug was stopped. The 300 mgm. case showed considerable diaphoresis almost at once and treatment was restarted after 7 days. The 1200 mgm. case began to complain quickly of general malaise, but the diagnosis was complicated by a complaint of dysuria and the discovery by the Genito-Urinary Service of a prostatitis around a prostatic calculus. This patient showed a most severe diaphoresis in 28 days and was returned to chlorpromazine in 33 days. All symptoms except the dysuria in the second case disappeared promptly after the ataraxics were restarted.

When the smaller intensively studied group was successfully withdrawn we turned to a larger study, in which 519 patients, nearly one-third of the non-medical psychiatric population at the hospital, were removed from tranquilizer medication for 90 days. Wards used in this study were 2 open wards, 3 partial privilege wards, and 1 which was geriatric with some younger regressed schizophrenics. Typical dosages in these patients were 300 mgm. or 600 mgm. of Thorazine per day or 30 mgm. Compazine. Meprobamate daily dose never exceeded 1200 mgm. per day. Their return to medication in the ensuing period showed a peak at 30 days with a large number, approximately 28%, still off at the end of the period. There were a few reports of nausea, vomiting and/or diarrhea early in the trial. None was severe, and few needed medication. All subsided promptly. Otherwise, withdrawal symptoms resembled those of the smaller group. However, some of these symptoms occurred in non-medicated patients as well, and in patients whose medication was not withdrawn, so that we feel it would be easy to overemphasize the expectancy of these symptoms. Where seizures have been reported in the literature with meprobamate withdrawal, the dosages have been much higher than we used. During the period there were 6 of the 519 patients sent to the maximum care ward. One had become intoxicated on partial privileges and 2 had been absent without official leave.

The reaction of the ward personnel was both interesting and a problem. On all wards the nursing assistants were quite doubtful of the wisdom of the attempt. This is understandable in a hospital which has never had a seclusion room and which prides itself on the non-use of restraints. As the failures began to return to medication this fear died away, the talk of a "change in ward climate" was no longer heard, and at the time the studies were terminated those who were not returned to medication were considered to be normal members of our ward communities.

Conclusions

It was the opinion of the staff physicians who had known the patients well for a long time, that there was probably some worsening in such matters as increase or beginning of hallucinations, poorer eating habits, in-

creased apathy, restlessness, slovenliness, and general deterioration. The few patients sent to the maximum care ward indicates that hyperactivity was never a pressing problem. The overall impression was that the diseases had merely resumed their symptomatic courses when the protection of the tranquilizer was removed. On the whole exacerbated symptoms subsided readily when medication was reinstituted. Transfers to the maximum care ward did not rise to an appreciable extent (6 in 3 months).

Summary

It is our opinion that the sudden withdrawal of tranquilizers from chronic psychotics living in a protective and reasonably permissive ward atmosphere will do no apparent harm to their condition in the majority of patients for a period ranging up to 5 months. Withdrawal symptoms were few, mild, and easily controlled, and asocial conduct usually subsided readily when the drugs were readministered. Drug intake as measured by duration, or dosage, or type of drug does not seem to be a factor as to how long a case can remain off medication socially. Neither do diagnosis, or apparent duration of illness, or age, except that those within the geriatric period seemed to remain off medication for the 90-day period in somewhat larger percentage. The results of this experiment seem to confirm a 1954 study(2) by a group at this hospital which found that clinical response and the pattern of resistive isolation in the Lorr Scale were the main improvements to be expected following the use of chlorpromazine and reserpine—and the present authors feel that this may well be true of all tranquilizers on this type of patient.

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CLINICAL NOTES

(The Clinical Notes report the findings of the authors and do not necessarily represent the opinions of the Journal.)

THE EFFECT OF AMPHENIDONE (DORNWAL)[1] IN ANXIETY STATES: A MULTI-BLIND STUDY

H. AZIMA, M.D., DOROTHY ARTHURS, R.N., AND A. SILVER, M.D.[2]

Since the effect of "major tranquilizers" on anxiety states has appeared to be equivocal, a continuous attempt has been made to develop specific antianxiety and antitension substances. Amphenidone (1-m-aminophenyl-2-pyridone) was introduced as such a substance(1, 2, 3). The present study was undertaken to systematically investigate this contention.

The research design was what we have designed as "multi-blind"(4) because it contains two characteristics: 1. Pharmacotherapeutic blind unit. This consists of a research service at the Allan Memorial Institute where all medications are distributed solely by the research nurse, under the supervision of the chief of the service, without the knowledge of the research team (7 psychiatrists, 1 psychologist, 1 social worker, 1 occupational therapist and 2 ward nurses). In this unit at any given time an average of 5 new drugs and 5 placebos are being used, to the effect that there is an ignorance of the pharmacotherapeutic regime at several levels. 2. Multiple observer assessment. The final evaluation of the drug effects is the pooling of observations of different members of the team. The drugs are administered at random. A simple rating scale was devised to evaluate anxiety, consisting of behavioral (autonomic signs, restlessness, irritability) and experiential indices (tension, anxiety, discomfort, jitteriness, "nervousness"). Complete disappearance of behavioral and experiential indices were designated as marked, and complete behavorial and partial disappearance of indices as moderate improvement. Slight improvement was included in nil category.

Amphenidone was administered orally in the above setting to 40 patients, with an average daily dose of 3700 mg. (maximum 6400 mg., minimum 1600 mg.) for an average period of 3 weeks. There were 22 males and 18 females with an average age of 37½ years. Diagnostically they consisted of 28 neurotics (10 anxiety states, 1 obsession, 4 mixed states, 10 depressions and 3 addictions) and 12 psychotics (1 depression, 11 schizophrenics). The major symptom in all cases was anxiety and tension.

Placebo was administered to 40 other patients for an average period of 3 weeks. There were 20 males and 20 females with an average age of 36. Diagnostically they consisted of 28 neurotics (10 anxiety states, 1 obsession, 6 mixed states, 10 depressions and 1 addiction) and 12 psychotics (1 depression and 11 schizophrenics).

RESULTS

In amphenidone group 9 out of 28 neurotics and 6 out of 12 psychotics showed significant (moderate to marked) improvement. In the placebo group, 2 out of 28 neurotics and 1 out of 13 psychotics showed moderate improvement. The Chi Square (X^2) analysis of the results indicated that the response to amphenidone in neurotic patients was statistically significant at slightly better than 0.05 level ($0.05>P>0.02$). In psychotic group there was only a tendency to significance ($0.10>P>0.05$), due to the small number of patients used.

Side effects were very minimal in amphenidone group and consisted of mild fatigue and drowsiness in 9 patients, slight dizziness and headaches in 6, hand tremor in 2 and nausea and vomiting in 2. Biochemical tests (liver function, W.B.C., urine analysis, and BP and TPR remained within normal limits.

[1] Dornwal is manufactured by Maltbie Laboratories Division.

[2] McGill University, Department of Psychiatry and A.M.I.

The general impression was that amphenidone was a mild to moderate and safe antianxiety and antitension substance and suited mainly for neurotic anxiety reaction.

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A CLINICAL EVALUATION OF FOUR ANTIDEPRESSANT DRUGS (NARDIL, TOFRANIL, MARPLAN, AND DEPROL)

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The purpose of this study [2] was to evaluate the effect of four antidepressant drugs,[3] on the clinical picture of depression.

The study covers the relatively short period of 3 weeks since: 1. We have baselines of expected response to established treatments such as EST, tranquilizers, support of milieu, and doctor-patient relationship for this period which could furnish comparison; 2. Longer periods (6-8 months) tend to confuse the question of attributing result to the drug, other concurrent therapies, or natural course of the illness; 3. In order to seriously challenge established therapies, the drugs would have to produce discernible clinical improvement in a 3-week period.

Subjects were selected on the basis of depressive symptomatology rather than of diagnostic category. Excluded were: 1. Patients with liver or kidney disease; 2. Patients who required the immediate use of established methods such as ECT (severely depressed, suicidal patients who refused food). A total of 26 patients were studied over a period of 6 months.

The study was based on frequent close observation of changes in the clinical picture. From his own examination and information from ward personnel, the resident filled out an evaluation form every third day, beginning with a 14 day pre-treatment period to get a clinical baseline and to pick up any trend of change before the drug was started. All subjects were receiving indicated regular treatment such as individual and group psychotherapy, occupational and recreational therapy. Patients were then placed on a drug for a 3-week period. As each form was completed, the resident turned it in, so as not to have it for reference in filling out subsequent forms. At the end of the 3 weeks' treatment period there were 13 evaluation forms for each patient describing his clinical picture over a period of 5 weeks, as shown in the following example.

EVALUATION FORM

Patient's Name_____ Physician_____
Day of Pre-treatment evaluation 1 3 6 9 12
Day of treatment (circle) 1 3 6 9 12 15 18 21
Patient's age_____ (1) Weight_____ (2) B.P._____
(3) Hours of sleep_____
(4) Bowel functioning:
(5) Side effects:
(6) Appetite and feeling about food:
(7) Participation in activities:
(8) Level of anxiety or agitation:
(9) Thought processes and content:
(10) Mood—subjective or objective:
(11) General statement as to change in clinical picture:

Patients were selected by the authors after study of history, psychiatric examination and physical examination. The name of each patient selected for the study was

[1] Veterans Administration Research Hospital, Chicago, Ill.

[2] Grants to support this study were provided by Hoffmann-LaRoche, Inc. and Wallace Laboratories, Inc.

[3] Nardil provided by Warner Chilcott Laboratories, Morris Plains, N. J.; Tofranil, by Geigy Pharmaceuticals, Ardsley, New York: Marplan, by Hoffmann-LaRoche Laboratories, Nutley, N. J.; and Deprol, by Wallace Laboratories, New Brunswick, N. J.

Our findings were as follows:

TABLE 1

DRUG	MUCH IMPROVED	SLIGHTLY IMPROVED	NO CHANGE	WORSENED
Marplan		1. Psychotic depressive reaction	1. Involutional depressive reaction	1. Character disorder with depression
		2. Depressive reaction psychotic	2. Alcoholism and chronic anxiety state and depression	
			3. Involutional psychotic depression	
Tofranil	1. Reactive depression psychotic	1. Schizophrenic reaction, catatonic type	1. Reactive depression psychotic	1. Schizo-affective reaction
	2. Psychotic depressive reaction	2. Character disorder with depression		
Deprol		1. Psychotic depressive reaction	1. Neurotic depression	
		2. Reactive depression		
		3. Schizoid personality with depression		
		4. Psychotic depressive reaction		
Nardil	1. Involutional psychotic reaction	1. Manic-depressive psychosis, depressive type		1. Reactive depression psychotic
	2. Schizoid personality with depression			
Placebo			1. Involutional depression	1. Psychotic depressive reaction
			2. C. T. disturbance, oral dependent type, with severe depression	
			3. Chronic schizophrenia	
			4. Chronic anxiety state	

sent to the hospital pharmacist who assigned one of the 4 drugs or placebo in rotation. All drugs were sent to the ward under a code name, and were taken orally. No one involved in the study knew which drug a patient was receiving. Only after all the data were analyzed did we break the code.

The data on the 13 evaluation sheets on each patient describing features of the clinical picture are traditionally regarded as especially pertinent in depressions. They depended on the clinical judgment and observation of the residents. Thus, clinical observation rather than check sheets or rating scales is the yardstick which has always been the determinant of practice, of accepting new treatment methods or discarding old. For this reason, in spite of its imprecision as a tool for scientific measurement, it was used in this study with the controls and balances built into the experimental design.

TABLE 2

DRUG	MUCH IMPROVED	SLIGHTLY IMPROVED	NO CHANGE	WORSE
Marplan		2	3	1
Tofranil	2	2	1	1
Deprol		4	1	
Nardil	2	1		1
Placebo			4	1

As mentioned above the patients in this study were receiving the usual therapies both before and after receiving the drug. Thus, when the drug was started, we were in a position to observe whether the baseline trend seemed to be significantly altered in a 3-week period.

We decided to graph the data on a simple three-point scale indicating degrees of severity of clinical depression with the upper point on the scale indicating significant improvement. The graphs, made up by an IBM consultant, merely represent the descriptive statements of the evaluation sheets. We then exercised two checks: 1. We asked each resident if the graph represented what he had intended in his evaluation sheets; 2. We had a consulting psychiatrist go through the nurses' notes on each patient and report if the description of change in clinical picture correlated with that indicated by the graphs. Both checks supported the accuracy of the graphs.

After we had thus determined a final evaluation of clinical change for each patient, we broke the code and determined the result by drug.

When analyzed in this way, our data are inconclusive, even when keeping in mind that we were directing the drug against depression regardless of diagnostic category. Certainly numbers are too small to warrant differentiating between the drugs in any conclusive manner. We will leave it to the reader to conclude any differentiation. Our only conclusion from these data is that all 4 antidepressants drugs showed better results than the placebo. This would seem to have some significance, even with small numbers, in a double-blind study.

If we present the data in terms of numbers eliminating diagnostic category, this differentiation between the 4 drugs and the placebo seems more striking.

Conclusions: 1. None of the antidepressant drugs is a wonder drug in the dosage and time period for which we used them, but they have some favorable influence on depressive symptomatology. 2. Objective, controlled clinical evaluation of drugs in psychiatry is difficult because of (a) the imprecision of our measurements, (b) the many variables (such as effect of individual psychotherapy, nurse-patient relationship, just being in hospital, *etc.*) which are hard to evaluate (not to speak of control), (c) the massive effort involved in dealing with statistically significant numbers in a study based on intensive clinical observation, (d) the inaccuracy accrued when one deals in large numbers using infrequent casual clinical observation, and (e) uncertainties as to natural course of illness when long timespan is involved.

Nevertheless, controlled clinical evaluations of new drugs are essential in order to maintain a rational treatment.

Drug courses used in the study:

1. *Marplan* (Analog of Iproniazid, an amine oxidase regulator). Dosage: 10 mg. p.o., t.i.d. for 7 days; 10 mg. p.o., b.i.d. for 14 days.

2. *Tofrānil* (Imipramine, G22355, MOA inhibitor). Dosage: 25 mg. p.o., t.i.d. for 21 days.

3. *Deprol* (Meprobamate plus benadyzine hydrochloride). Dosage: 1 tablet p.o., t.i.d. for 21 days (400 mg. meprobamate plus 1 mg. benadyzine hydrochloride).

4. *Nardil* (MOA inhibitor). Dosage: 15 mg. p.o., t.i.d. for 21 days.

CASE REPORTS

THE PHOBIC ANXIETY–DEPERSONALIZATION SYNDROME

I. PIERCE JAMES, M.A., D.P.M.[1]

Roth(2, 3) described as "the phobic anxiety-depersonalization syndrome" a group of symptoms which he had noted occurred frequently in individuals of immature and dependent, yet obsessionally driving and routine-bound personality under certain types of stress. He regarded the condition as a "pan-neurosis" often dominated by anxiety, depression and depersonalization; but a "distinct entity," to be distinguished from depressive illness, *etc.*

The essential features are depersonalization and a characteristic pattern of phobic anxiety; often a fear of leaving familiar surroundings, of being alone in crowded places, *etc.*, and of fainting, losing control, harming others, *etc.* Vaso-motor disturbances, hypochondriacal preoccupation, obsessional symptoms and a neurotic type of depression (often labile but occasionally severe) occurred in the majority of patients. In nearly half of the cases there were "not only unreality feelings, often of an episodic nature, and *déjà vu* phenomena but additional symptoms suggestive of dysfunction in the temporal lobes or related structures in the limbic system. These included metamorphosia, panoramic memory, intense hypnogogic hallucinations and the interesting closed-eye hallucinations ('private cinema phenomenon') often described in experiments with hallucinogenic drugs and in predelirious states."

Roth placed great emphasis on the premorbid personality and on the precipitating life-stress. The patients were on the one hand conscientious, scrupulous, earnest, routine-bound and anxiety-prone—in other words mildly obsessional—while on the other hand they were dependent and emotionally immature to a marked degree, intense and often exclusive of social contacts outside the immediate family circle. Most of the women were frigid but strove for the security of their marriage. Breakdown "followed closely on a bereavement or suddenly-developing serious illness in a close relative or friend, illness in or acute danger to the patient himself . . . or a severance of family ties or acute domestic stress, which often constituted a threat to marriage." There had thus been a real or symbolic threat to health or security in a certain type of security-seeking individual. In a proportion of the women in Roth's series the illness had followed childbirth.

Provided that the clinical assessment is made critically in terms of symptomatology, pre-morbid personality and precipitating events, the concept of the phobic anxiety-depersonalization syndrome seems useful as it does carry certain therapeutic and prognostic implications. Roth(2) found electroshock to be contraindicated. In the writer's experience the condition tends to run a remitting-relapsing course in relation to the patient's life situation, but florid or permanent psychosis does not ensue. Some of these cases are probably diagnosed as depressive illness; others as schizophrenia, or pseudo-neurotic schizophrenia(1). However Roth (2) feels that pseudo-schizophrenic neurosis would be a more appropriate title and the natural history of the illness usually bears this out.

A 27-year-old English-born married woman presented symptoms of tension, phobic anxiety, depersonalization, insomnia, labile depression, hypnogogic hallucinations, *etc.* The illness had developed after the birth of her 3-year-old daughter and had improved after some months, only to relapse following her husband's admission to a T.B. sanatorium.

Her childhood had been unhappy. She was the oldest of 6 and had always been shy, timid and anxious as a girl. Her father was a sailor whose rare visits home were among her happiest memories. When she was 11 he finally left the family and some years later died of tuberculosis. After his departure the mother's drinking and promiscuity became even more marked. Mother would disappear from the home for days leaving the patient, at the age of 12, to fend for her 5 younger siblings. This

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was during the war-time bombing of England and she remembers nights of terror trying to pacify the younger children. Eventually the children were taken into the care of the local authority and at the age of 14 she was sent to Australia under a child migration scheme.

At the age of 17 she was found to have tuberculosis and spent over a year in a sanatorium where she met her future husband. He was 9 years older and of Polish descent. She married some months later "to get away from the hostel." Sexual adjustment is poor but she insists that the marriage is very satisfactory. There are 3 children.

Before her present illness she rarely consulted a doctor (except for her chest condition), was cheerful, energetic and a competent housewife. She was meticulous in her activities and somewhat obsessional (compulsions to hang her wash on the line strictly according to size of garment, to check taps on leaving the house, *etc.*). She had few social contacts outside the family. She was subject to some degree of tension and depression during the premenstrual week.

When first seen she complained of feelings of strangeness—"Not me; lightheaded; as though I were standing behind watching things going on." These feelings were worse in company and later she developed intense and frightening periods of depersonalization lasting 1 or 2 hours and usually occurring in the mornings. She also had episodes of tension and anxiety; mounting on occasions to panic. She was afraid to leave the house alone, to travel on buses; was afraid she might harm the children, lose her senses in company or go out of her mind. She was subject to depressions when she would weep for no reason and become despondent but these were usually short-lived. Her obsessional traits had become more marked. At night she was unable to go to sleep for some time but did not wake early in the morning. As she was going to sleep she would become vividly hallucinated, hearing the voices of her children calling, her neighbours talking, *etc.* She also had *déjà vu* experiences and other perceptual disturbances. On occasions objects and people would appear distorted or changed and scenes or people's faces would seem unfamiliar and terrifying. There was no evidence of any epileptic phenomena.

Psychological testing [2] disclosed average intelligence and an "overall test pattern pointing to an immature, dependent, unreflective hysterical character structure. Anxiety and phobic fearfulness are associated. Many of her Rorschach associations and T.A.T. themes centered on early emotional deprivation, with feelings of loneliness, inadequacy and threat of external danger throughout. Considerable resentment over unsatisfied dependency needs exists, with any expression or awareness of this causing guilt and fear of hostile retaliation . . . rejection of the last child as a usurper of her own dependency needs."

The patient was seen regularly at the outpatient clinic and at first improved considerably but after 10 weeks her symptoms were again so intense that she had to be admitted to hospital. After an initial reluctance to stay she settled well into the ward, where her behaviour was conforming but rather exhibitionistic and subtly attention-seeking. In therapy she was at first flirtatious, talkative and demanding, but later was able to discuss her dependency-needs and her pattern of adjustment. Her symptoms again receded and her discharge from hospital was arranged but, because of a minor domestic problem (and also because a problem case conference had been arranged) this was postponed. This decision was unfortunate and thereafter she became so dependent on the hospital milieu that final discharge was only feasible after her husband's return home from the sanatorium. She continues in outpatient therapy and is much improved but by no means symptom-free.

Comment

The patient described exemplifies the phobic anxiety-depersonalization syndrome described by Professor Roth(2). She was an immature, dependent, security-seeking person whose first breakdown occurred after the birth of her third child. Acute relapse followed her husband's re-admission to hospital with tuberculosis, when she was left alone at home to cope with her 3 children; circumstances which re-activated adolescent trauma.

In spite of the intensity of her symptoms and the occurrence of nocturnal hallucinations, *etc.*, the illness ran an essentially neurotic course.

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[2] The author is indebted to Mr. A. F. Bownes, B.A., Dip. Clin. Psych., Heathcote Hospital, Perth, Western Aust. for his psychological assessment of the patient.

ELECTROCONVULSIVE THERAPY FOLLOWING AN OPERATION FOR COARCTATION OF THE AORTA

SHIRLEY RUBERT, M.D.[1]

With the development of surgical techniques to correct certain congenital malformations of the heart and great vessels, new questions have been posed, a crucial one being: Can electroconvulsive therapy be used with safety to treat postoperative psychoses?

Case Report: Seven days following a surgically successful repair of a congenital coarctation of the aorta using a synthetic graft, psychiatric consultation was requested. The previous evening, the patient, a 28-year-old, married, television repair man, had become severely agitated and had slept little. He was becoming progressively more exhausted because of hyperactivity. He described a religious experience which he maintained proved he was saved and that his mission was to lead others to salvation. He literally shouted that he felt wonderful and had no worries.

Until a few months prior to his operation the patient lived with the belief that he suffered from severe rheumatic heart disease and hypertension; therefore, his activities had been so restricted that he did not graduate from high school until he was 21. He always felt excluded from group activities other than those at church. He was rejected by the Armed Forces and could not find employment in industry because of his hypertension. As he grew up he worried about possible blindness because of hypertension and feared mental illness because his father had once been in a psychiatric hospital.

At 25, in spite of his family's disapproval, he married the first woman he ever dated. It was when he and his wife were examined because of her repeated spontaneous abortions that the nature of his disability was first diagnosed as coarctation of the aorta. Initially he was unwilling to consult with a cardiologist and cardiac surgeon, but he did so at his wife's insistence. An operation was recommended but a delay of several months ensued while State Rehabilitation Funds were obtained to cover operative expenses. During this period he spoke incessantly about the forthcoming operation and wondered why the correct diagnosis had not been made earlier.

In the immediate postoperative period, and before the acute psychotic episode, he felt very depressed. He was certain that he was about to die and believed that his family and the doctors and nurses expected this outcome. He had witnessed the death of a younger patient who had undergone a cardiac operation, and he believed that another patient on the service had also succumbed. He knew that his blood pressure had not returned to normal levels, and he feared complications because he was febrile and on antibiotics. The postoperative treatment, especially endotracheal suctioning, was more painful than had been anticipated.

On the seventh day, psychiatric consultation was requested. Intramuscular thorazine (100 mg.) followed by intravenous amytal (approximately 300 mg.) to induce sleep did not result in a sustained change in his state.

The following day he was transferred to the Syracuse Psychiatric Hospital. There, his course was characterized by marked variability. He was almost constantly drenched with perspiration. Periods of muteness alternated with periods of marked agitation and shouting. He became quiet only when he was attended constantly by hospital personnel. His speech became progressively more slurred. This he attributed to an injury to his tongue caused by endotracheal suction. During periods of excitement his blood pressure reached 280/140 but could be lowered to 140/90 with intravenous amytal (250 mg.). There was an intermittent supraventricular tachycardia of 150 per minute. He continually climbed or rolled out of bed and slept on the floor. At times he would collapse in the hallways and lie on the floor. His appearance was that of a person more dead than alive since he was always extremely pale and perspiring and kept his eyes half-closed and his mouth half-open. Eventually every effort at verbal communication completely failed. Thorazine no longer produced alterations in his behavior. His physical condition was deteriorating in that he was losing weight and was failing to maintain an adequate fluid intake.

With the surgical consultant's approval, the decision was made to use electroconvulsive therapy as a life-saving measure. Accordingly, 47 days after his operation, the first treatment

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was given. No muscle relaxants were used. Marked temporary improvement followed and was sustained after the second ECT. He received 7 treatments. There were no complications. He reverted to his previous personality and he became eager to resume "business as usual." He returned home 13 days following the last ECT.

SUMMARY

Improvement in and more widespread use of corrective surgical procedures for congenital anomalies will result in a new life experience for many patients. It will also increase the life span for some of them. These patients may present new problems for the psychiatrist. In the case reported here, unmodified electroconvulsive therapy was used without untoward effects in a man who had undergone a major intrathoracic vascular surgical procedure involving the use of a synthetic graft. The first treatment was given 47 days following the operation. Certain dramatic aspects of the preoperative and postoperative reactions have also been described.

SIX MONTHS OBSERVATION OF PSYCHOTIC IDENTICAL TWINS [1]

DAVID W. SWANSON, M.D.[2]

Uniovular twins are one of nature's more tantalizing offerings to medical observation. Identical genetic structures are obliged to react with an environment that exerts its random effects on each individual, from the first cellular division until the last. The degree to which the chromosome and the environs contribute to the result remains fertile with discord. A valuable opportunity is offered when identical twins appear, simultaneously, for psychiatric hospitalization. In this instance both patients were observed for 6 months. The following is a report of concordant and discordant behavior in twins and some of the more obvious causes for their differing.

Birth to Adulthood: These male twins were the product of a full term, uncomplicated pregnancy and were delivered at home. Twin A arrived first, as a breech presentation weighing 4½ pounds. Twin B followed immediately as a cephalic presentation weighing 6¾ pounds. Physicians hospitalized the smaller infant for observation and his brother was delegated to keep him company, which he did for 3½ weeks. For a portion of this time it was necessary that Twin A be in an incubator. Both were breast-fed for 4 months and bottle-fed until 1 year. They were toilet trained and able to walk at just over 1 year.

Twin A became a feeding problem and when forced to eat foods he disliked would vomit violently. He began talking at 2 years, several months after Twin B, and demonstrated fear, anger and happiness with much less restraint. Early the two would isolate themselves from other family members, with Twin B appearing calm and protective of his brother.

The twins began nursery school at age 4. Twin A was always inferior in schoolwork and failed the second grade. To avoid separation he attended summer school. In school neither twin made friends. They were aloof, passive and created few problems before terminating their education just prior to graduation. During these years Twin A experienced an enlarged testicle (age 2), St. Vitus Dance (age 10), stuttering (age 10) and severe acne (age 15); all of which Twin B escaped.

Adulthood: Both twins were felt to become more seclusive following adolesence. They would date only on a "double date" basis and bragged of patronizing houses of prostitution. They began smoking and drinking. Later Twin A drank to excess and when intoxicated was violent, pretending he was "Al Capone."

Twin A was rejected for military service, the exact reason being unknown. Twin B was drafted into the navy, but this career aborted at 8 weeks when he was given a "general discharge" because of inability to adjust. Except for this separation they always worked together.

During the year preceding admission to hospital they became more inseparable and

[1] We gratefully acknowledge the assistance of Doctors Borelli and Bielkus, in accumulating this information.

[2] Illinois State Psychiatric Institute, Northwestern University Service.

would neither eat nor converse with the family. Their belligerence made it impossible for the father to employ them and 2 months before admission they physically attacked him. They would not leave their room, were untidy, dressed bizarrely and felt others considered themselves superior. Although the family considered Twin A as the more disturbed they had them committed together.

Family History: Neither parent had experienced any significant medical or psychiatric illness and there was no family history of such. The father was from a financially deprived background and had worked exceedingly hard to gain ownership of his home and business. He was felt to be aggressive, dictatorial and at times depreciating.

The mother seemed quite passive and fearful. She was generally submissive to her husband and did not protect the children against his dominance. However, when he was absent she would contradict him by making special concessions to the children. There were 2 younger female siblings whose adjustment was felt to be good.

Findings Upon Admission: Twin A was suspicious, possibly hallucinating and irritable. He admitted a "nervous breakdown" due to overwork, and the fear that he might have syphilis which could eat his body away. He berated both parents. Twin B was guarded, angry and kept showing his commitment papers to the physician. He referred to his father having him "thrown in the hospital without reason."

Psychological evaluation resulted in both twins relating intensely to the female examiner, A as sexually provocative and B as physically threatening. They were both unshaven, belched frequently and drew pictures of the examiner. Verbalizations to the same stimuli were many times identical. Twin B appeared more intelligent, but neither cooperated enough to make a complete intellectual evaluation. Point to point correspondence between Rorshach responses did not exist, but both gave obvious evidence of immense hostility toward female figures and considerable anxiety. Twin B demonstrated a paranoid preoccupation with being watched.

Physical examination revealed men who were quite similar in general appearance, mannerisms and height. Twin A weighed 10 pounds more than Twin B and they could be differentiated readily. Ultimately the objective basis for uniovularity was 8 identical blood factors. The electroencephalographic records showed the same regularity and frequency of alpha rhythm. However, the alpha rhythm of B was of lesser amplitude, had a better reactivity and was driven by photic stimulation.

Hospital Course: During the 6 months of hospitalization Twin A gained 12 pounds and Twin B lost 8 pounds. They were on different wards after 4 weeks and Twin A was on phenothiazines throughout, his brother received no medication. To their respective male therapists they demonstrated little motivation. Twin A was untruthful, sarcastic, drank on passes, expressed peculiar ideas and did not show anxiety until transfer to another hospital was imminent. Twin B originally belligerent and hostile became more withdrawn, silent and suspected people were watching him. He passively accepted arrangements for discharge to parental custody.

Nursing staff observed that the twins spent much time together, apparently without talking. They generally resented all approaches of personnel and pestered the female patients. Twin A was accused of sexual activity with a female patient and physically attacked a male attendant. Both were clever in obtaining alcohol and arranging meetings with each other, even when attempts were made to prevent this contact for therapeutic reasons. Twin A expressed his feelings more readily, got intoxicated and could be sociable, but Twin B remained aloof and withdrew from the nursing staff.

In activity therapy the twins worked on projects irregularly, were slow and lacked skill or creativity. They frequently used this facility as a meeting place.

Discussion

Four observations recur in the case records and merit attempts at explanation: 1. The twins were generally similar; 2. Both were functioning pathologically; 3. A powerful relationship existed between them; 4. They demonstrated dissimilarities.

Numerous similarities in physical findings, behavior and psychopathology were present in these twins. Features frequently concordant in identical twins have been thoroughly discussed from a genetic viewpoint(1, 2, 3, 4). Conclusions from these extensive studies indicate that basic personality make-up is largely determined by heredity, and that adaptive failure follows a course primarily genetically determined.

However, whether due to inborn demands of the twins or inadequacies of the environment, no warm human relationships were successfully established beyond each other. They withdrew at an early age, maintaining an indifferent relation to a world that did

not demand much of them. With adulthood and increasing requirements by family and society they became unable to control their world by indifference, aloofness and evasiveness. In handling these demands they manifested increasing hostility, projection, alcoholic excesses and seclusiveness unacceptable to the family.

In the hospital the relationship between the twins was unique. They preferred each other's constant company and resisted efforts at separation by meeting each other in hallways, activity facilities and their rooms. Actually, when together they conversed very little but gave the impression they were communicating and more at ease than when separated. When confronted together they reacted as a unit. When separated, individual differences became obvious.

This relationship is hardly surprising. It was at birth that the environment made itself clear that these twins were to be viewed as one organism, by subjecting Twin B to unnecessary hospitalization. This is further illustrated by: standardizing feeding schedules and toilet training; assuring that they were together in school; having the same plans for each of them; and finally simultaneous commitment. Independent adaptation was apparently difficult, or at least they were successful in avoiding it.

Despite the above there were obvious dissimilarities. Twin A had more physical difficulties and deficiencies. These were: lower birth weight, slower development, less intelligence, a greater number of physical incapacities and a pathological reaction to alcohol. Less certainly due to biological difference were early feeding problems, greater impulsivity and more bizarre mental symptomatology. His greater capacity for expressing feelings and socializing may have been the result of increased attention in response to his demands as an infant and child (feeding problem, fearfulness and rheumatic fever).

The dissimilarities influenced discharge planning. The family and society were more willing to tolerate the withdrawn, seclusive, hostile Twin B. Though his adjustment was quite pathological it was more acceptable than the unpredictable behavior of Twin A who reacted with physical aggression and marked loss of control when drinking.

SUMMARY

This is a case report of identical twins observed for 6 months in a hospital setting. Their past history and clinical course are reviewed. Similarities and dissimilarities are described.

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SEVERE PAPILLEDEMA ASSOCIATED WITH DRUG THERAPY

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We have recently observed a patient who evidenced marked ophthalmologic and neurological changes while on drug therapy. Visual disturbances and changes in the ocular fundi have been previously reported with the use of thioridazine(3, 4, 5) and with the experimental phenothiazine NP 207(2). Patients have reported blurring of vision and difficulty in light adaptation. The fundi generally showed increase in retinal pigmentation, with retinal edema and hyperemia of the discs. Davidoff(1) has summarized a group of 29 neurological patients who presented with headache and papilledema and who apparently had benign intracranial hypertension of unknown etiology which he termed "pseudo tumor cerebri." The similarity of this group with our patient merits consideration.

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Case Report: The patient was a 21-year-old Negro girl admitted to Hillside Hospital on Jan. 20, 1960, following repeated hospitalizations for mental disorder. Prior to admission she had received chlorpromazine without complication. She was referred for drug therapy because of a paranoid and depressed state. She received imipramine, beginning Mar. 30, 1960; starting at a dose of 75 mg. daily. This was increased by 75 mg. at weekly intervals to 300 mg. daily, and maintained to May 6. At this time she was agitated and complained of severe headache for the previous 3 days. On admission an electroencephalogram had shown a symmetric, non-focal record with some theta but no delta activity. On May 5, this was repeated and it showed no significant changes from the pre-treatment record.

Because of her agitation, thioridazine, 100 mg. b.i.d., was started on May 7, and imipramine was reduced to 150 mg. o.d. On May 11 the patient reported a stiff neck. The next day thioridazine was increased to 600 mg. daily. On May 13 she reported diplopia and blurred vision without weakness of extrinsic ocular muscles. With increasing symptoms of visual difficulty, 4 days later thioridazine was discontinued and chlorpromazine 400 mg. o.d. was started. Her symptoms became more intense and she complained of persistent diplopia, headache and thickening of her speech. On May 20 examination of her ocular fundi showed severe bilateral papilledema with hemorrhages and edema of the retina. All other cranial nerve function was intact. There were no sensory abnormalities. There were no pyramidal tract signs elicited.

All medication was stopped. A spinal tap on May 24 showed an opening pressure of 320 mm. and closing pressure of 150 mm. with open flow. The protein was 56 mg.%, chlorides 121 mg.%, glucose 72 mg.% and there were 237 fresh RBC's in the fluid. The cerebrospinal fluid and blood serological test for syphilis were both negative. X-rays of the skull were normal except for calcification of the petroclinoid ligament. An EEG May 26 showed mild focal dysfunction manifest by a small amount of delta (4-6 cps) of low voltage in bursts on the right side chiefly posteriorly and occasionally on the left side. This was not changed by hyperventilation. A pneumoencephalogram showed the ventricular system to be moderately and diffusely enlarged within the upper limits of normal and there was no displacement of the ventricles. Analysis of the fluid removed revealed a protein of 22 mg.% and no cells. Twenty-four hours following intravenous administration of 300 microcuries of radioactive iodinated serum albumin the skull was scanned for evidence of abnormal foci of radioactivity and no foci were found. Venous oxygen saturation was 95.4% which is consistent with cerebral edema.

The patient improved steadily over the next 2 months so that on July 6 the discs were observed to be flat and no new hemorrhages were seen. On September 16 her visual acuity was 20/300 in right eye and 20/30 in the left eye. There was macular degeneration of the right eye and a central scotoma in the left eye which could be accounted for by localized retinal scarring. There was no significant alteration in pigmentation in either ocular fundus.

Discussion

In pseudo-tumor cerebri, after infection and trauma are excluded, there remains a group whose etiology is undetermined. Employing the criteria of increased intracranial pressure, papilledema, normal spinal fluid protein and cells, normal pneumoencephalogram and recovery, this patient fits the classification of pseudo-tumor cerebri. The electroencephalographic changes noted in this case are more abnormal than those reported by Davidoff.

The ophthalmological response was considerably more cataclysmic than has previously been noted with drug therapy and may represent a more severe degree of retinal edema and hyperemia noted elsewhere(3, 4, 5). The retina is an integral part of the central nervous system, and thus offers a useful locus for the observation of changes induced by drugs affecting the CNS. Whether the clinical picture presented does represent a drug reaction, and whether this reaction was referrable to either thioridazine or imipramine cannot be proven in this single case. It would be of importance to look for other cases of ophthalmological reactions to the psychotropic agents and to investigate patients presenting with pseudo-tumor cerebri for a history of drug ingestion.

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EXTREME EOSINOPHILIA DURING IMIPRAMINE THERAPY

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The effectiveness of imipramine (Tofrānil) as an anti-depressant agent is now established. Side effects are well documented and may be expected in a proportion of treated cases. Investigators(1, 2) have reported white count elevations during treatment ranging from a mild transient leucocytosis to a total white count in excess of 20,000. Hippius(3) has observed a significant increase of eosinophils, though not in excess of 5%, which is followed by a decrease as treatment is continued. We wish to report an unusual eosinophilic reaction with imipramine during the course of treatment of a depressed patient.

A white woman, aged 50, was first examined at the University Hospital on November 9, 1960. Her chief complaint was inability to sleep for the past 4 or 5 years. In addition, she had a poor appetite, was about 14 pounds under weight, and stated that she was extremely tense. Her husband noted that she was very irritable and had gradually withdrawn from her usual social contacts. There had been occasional episodes of tearfulness. In an effort to deal with her symptoms, she had relied heavily on various tranquilizers, sedatives, and alcohol. Her general physical and neurological examination was not unusual except for tremulousness of the hands. The urinalysis was normal. Blood examination : Hb. = 14 grams, W.B.C. = 10,000, polymorphonuclear leucocytes = 54, lymphocytes = 45, and monocytes = 1. Skull and chest X-rays were normal. An EEG was interpreted as showing abnormal fast activity probably due to excessive medication.

Psychiatric consultation was obtained, and a diagnosis of involutional depressive reaction was made. The patient was placed on imipramine (Tofrānil) 150 mg. daily, with small doses of sodium amytal if needed. In her second visit, 2 weeks later, the patient was much improved and the dosage of imipramine was reduced to 100 mg. daily. The W.B.C. was 9,400. She was seen again December 16, 1960, and was judged so improved that further reduction in the medication could be made. That evening she noted some stiffness of the neck but was able to sleep. The next morning she could not bend her neck, had a severe generalized headache, and was nauseated. She was admitted to the University Hospital later in the day. Her only findings on admission were a rigid neck and excessive perspiration. Her temperature was 99.2, pulse 64, and blood pressure 140/85. Urinalysis was normal. Blood examination : Hb. = 14 grams, W.B.C. = 30,000, polymorphonuclear leucocytes = 21%, lymphocytes = 18%, and eosinophiles = 61%. Because of the stiff neck and elevated W.B.C. a lumbar puncture was done. The pressure was normal, there were no cells, the Pandy reaction was negative, protein = 40 mg.%, and sugar 52 mg.%. A chest X-ray was normal. Her medications were discontinued. She remained afebrile, and within 2 days felt much better and her neck was supple. Repeat examination of the blood 2 days after her admission showed a drop of the W.B.C. to 26,350 and of the eosinophiles to 31%. A bone marrow examination showed a marked eosinophilia of approximately 50-60% of the cellular elements. No immature cells of the myelocyte series were noted. Trichinella skin test was negative, and there was nothing in her history to suggest a parasitic or helminthic infestation. The blood lupus erythematosis preparation was negative.

She continued to improve, and was dismissed 4 days after her admission. The W.B.C. at that time was 15,450 with 32% eosinophiles. Eight days later in an outpatient examination, the W.B.C. was 7,100 with 10% eosinophiles, 62% polymorphonuclear leucocytes, 1% basophiles, and 27% lymphocytes. Twenty-one days after discharge from the hospital, the W.B.C. was 11,150 with 3% eosinophiles, 65% polymorphonuclear leucocytes, 28% lymphocytes, and 4% monocytes. The red blood count was

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4,490,000 and the Hb. was 13.6 grams. She had not been on any medication for this period of time except for some chloral hydrate capsules for sleeplessness. The symptoms of depression were starting to recur.

Discussion

The eosinophilia in this patient was remarkable in its severity and prompt disappearance after discontinuing drug therapy. While very slight elevation of the eosinophils has been reported with imipramine, such a startling alteration in the blood elements has not, to our knowledge, been observed. An attempt was made in this patient to rule out the common causes of eosinophilia. However, the rapid return of the bloods elements to their normal values after discontinuing drugs served as the best means of differential diagnosis from other causes of eosinophilia such as Loeffler's pneumonia, eosinophilic leukemia, parasitic infestation, and collagen vascular disease.

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LOSS OF EJACULATION DURING MELLARIL TREATMENT

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This report concerns 3 patients who experienced loss of ejaculation during Mellaril treatment. Such an effect had, to the best of my knowledge, not been encountered or reported in connection with any other phenothiazine compound.

Case 1. A 45-year-old engineer, twice divorced, was referred to me by the company physician because he had manifested personality problems which interferred with his effectiveness as an employee. The clinical examination revealed him to be very tense, suspicious and fearful. Because he had divorced his second wife against the dogma of her church, he felt persecuted by spies sent to this country by the Vatican. Although very reserved and mistrustful he began to relate well in therapeutic sessions. Thorazine was prescribed to attenuate the paranoid tension and to control his hostile outbursts which endangered his position. After several weeks he suddenly discontinued treatment, complaining to his family physician that the Thorazine had seriously disturbed his mental capacities. Since he had shown improvement during treatment but became worse after termination, his company insisted that he continue treatment or leave his job. He returned to my office and complained of very severe and disabling insomnia and demanded medication. In view of his antagonism to Thorazine, I prescribed Mellaril, 100 mg. in the afternoon and at bed time daily. This patient's love life consisted of weekly visits to the same prostitute whom he had favored for several months. On the occasion of his first intercourse with her after taking Mellaril, he reached orgasm but had no ejaculation. He became very upset when he saw me again, felt sure that this was a drug effect and accused me of depriving him of his manhood. I interpreted his complaint as a psychological maneuver and assured him that this had nothing to do with his medication.

Case 2. A 40-year-old married man consulted me because of lack of energy, depressive moods and fears of impotency. Being married the second time, he was father of 4 children. Although he worked every day and was, in fact, quite compulsive about the performance of his duties, he complained of marked tiredness and apathy throughout his working hours followed by anxiety and restlessness in the late afternoon and evening. Clinical examination revealed evidence of a mild depression. I prescribed Dexamyl, 5 mg. in the morning and at noon and Mellaril, 50-75 mg. in the early afternoon and evening. When he visited my office a week later, he complained of absence of ejaculation. Although he had experienced difficulties with erection in the past, intercourse had always been normal once he had been able to insert his erect penis into the vagina. He was therefore puzzled about the missing ejaculation and he attributed this to the medication.

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Case 3. This 36-year-old married patient was referred by his attorney because of a trial in which he was charged with repeated sexual relations with one of his daughters. His wife complained that he had always been "oversexed." On the advice of the court, wife and children left him for a probational period during which he was ordered to seek psychiatric treatment. Personality study revealed him to be an aggressive and impulsive individual who had never been able to tolerate sexual frustration. Although he had a good work record, his family and social relations had suffered by his explosive and demanding behavior. He began treatment in a mood of anger, resistance and hostility. Mellaril, 100 mg. t.i.d. was prescribed to help him to regain self-control. Since he wanted to remain faithful to his wife in the hope of a later reconciliation, he satisfied his strong sexual desires by masturbation. Within a week of taking Mellaril he not only observed a lessening of sexual desire but commented that he had "no secretion" when reaching a climax by masturbation. He wondered whether this had been an intended part of the treatment.

The 3 cases are represented in the chronological order of their occurrence. In the first instance, I was misled by strongly suggestive psychological evidence to ignore the somatic implications of the complaint. When the second patient, so utterly different with regards to personality and psychopathology, reported the same disturbance, I gave serious consideration to the evidence of a Mellaril effect. While I had not abandoned all remnants of doubt about the possibility of coincidence, the third case confirmed the existence of a drug-induced functional disorder beyond reasonable doubt. Discontinuation of Mellaril, moreover, promptly restored normal ejaculation in each patient. The occurrence in 3 patients represents a rather high frequency in the small group of private patients whom I have treated with Mellaril. Thus far I know of only one other case reported in the literature.[2] It would seem unlikely to get complaints about sexual disfunction from hospitalized patients. But this report may alert physicians to investigate further incidences in office or clinic patients.

While an explanation of the underlying mechanisms of the absence of external ejaculation may come from the urologists, there remains the interesting fact of unique differences which characterize the otherwise similar action spectra of phenothiazine compounds.

[2] Singh, H. : Am. J. Psychiat., 117 : 1040, May 1961.

INHIBITION OF EJACULATION AS A SIDE-EFFECT OF MELLARIL

MICHAEL GREEN, M.D.[1]

I would like to comment on the clinical report by Dr. Singh (volume 117, page 1041, of the Journal), "A Case of Inhibition of Ejaculation as a Side-Effect of Mellaril," to provide an explanation of the probable mechanism of this side-effect.

In the January, 1954 issue of *The Connecticut State Medical Journal,* Dr. Sidney Berman and I reported on the "Failure of Ejaculation Produced by Dibenzyline," a side-effect clearly produced by that drug in 4 of a series of patients to whom it was administered experimentally to observe its effects on the symptoms of various anxiety syndromes. The clue to the mode of action of this potent adrenolytic agent in producing the side-effect was provided by reports in the neuro-surgical literature of the same phenomenon occurring in some cases following bilateral thoracolumbar sympathectomy. The explanation of this untoward effect is seen as based on the complex physiology of ejaculation which may be summarized as follows : while the striated muscles of the penis are under control of the spinal nerves and, therefore, would remain unaffected by sympatholytic agents, the peristalsis of the vasa deferentia, seminal vesicles, and ejaculatory ducts which discharge semen into the urethra is induced by efferent impulses from the hypogastric plexuses which derive from the thoracolumbar (sympathetic) outflow. A potent sym-

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patholytic agent would produce failure of ejaculation by blocking these adrenergic impulses at the neuro-effector junction. Since the phenothiazine compounds all include, among their pharmacological effects, a greater or lesser degree of adrenergic blockade, it may be assumed that Mellaril, one of this group, produced the side-effect in question by way of the mechanism described.

ANOTHER CASE OF INHIBITION OF EJACULATION AS A SIDE EFFECT OF MELLARIL

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A 40-year-old white male patient, schizophrenic reaction, paranoid type, has been in group therapy for one year. At first he was extremely rigid and unable to relate any feelings. During the past 2 months, however, he began to verbalize intense feelings of bitterness and anger. He declared that at times his rage reaches such propelling force that he shouts out loudly when alone. He was afraid of being unable to control this anger and that it might lead to conflict with others. He was, therefore, placed on Mellaril, 25 mg. t.i.d. After having taken this medication for one week he reported feeling much more relaxed and less bothered by his anger, although still aware of its seething quality. He did complain about excessive drowsiness. The dosage, consequently, was decreased to 10 mg. t.i.d. The following week he stated that his drowsiness had passed, but mentioned another side effect which he had originally estimated to be unconnected with the drug intake. Three days after the start of his medication, he noticed that his ejaculatory powers were gone although there was no decrease in his sex desires. He had "the sensations and the climax but ejaculation was lacking." Nevertheless, even without ejaculation he felt more relaxed. Patient was advised to discontinue Mellaril for one week, but because of the good relaxing effects he disobeyed this order. Inability to ejaculate persisted. He was again urged to discontinue Mellaril and meprobamate was substituted. The following week he reported that after 2 days his ejaculation had returned and remained active. Another attempt was made with Mellaril resulting in a repetition of original events.

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HISTORICAL NOTES

BENJAMIN RUSH'S SON

FRANKLIN S. KLAF, M.D.[1]

Benjamin Rush, patron saint of the American Psychiatric Association, had a son whose psychiatric contributions have received unjustifiably limited notice. In historical surveys of American Psychiatry(1, 3) James Rush is not mentioned. Wells(8) notes that his main book is not even in the Library of Congress.

James Rush (1786-1869) was the second of 13 children born to Benjamin and Julia Rush. From 1805-1809 he was a medical apprentice to his father, also attending the University of Pennsylvania where Benjamin Rush was professor of chemistry. Wishing to follow his father's medical itinerary, in 1809 at age 23, he left for Edinburgh to complete his medical training, returning to Philadelphia in 1811, where he practiced medicine until his death.

In 19th century medicine James Rush was widely known for his work on phonetics, his textbook(7) becoming a standard work and going through 7 editions. A man of wide literary and cultural pursuits(6), his main interest was psychology. He began planning his study "An Analysis of the Human Intellect" at the same time as his illustrious father was writing the book(4) that became a cornerstone of American psychiatry. Gathering data for more than half a century, he finally published his major work(5) in 1865, 4 years before his death.

The iconoclastic spirit that involved Benjamin Rush in revolutionary activity(2) is evident in his son. James Rush was a tempestuous and extremely complex man who had contempt for metaphysics and mediocrity. He was passionately interested in logic, emphasizing that accumulated experience was wasted unless it was systematized. He spoke of the contemporary medical climate as "this age of medical pretensions and professional trifling," and made many enemies. Influenced in Scotland by Dugold Stewart, he was philosophically 50 years ahead of his time, championing the logic of the pre-Socratics while railing against Aristotelian syllogisms.

Despite these varied interests, James Rush spent his life trying to understand the workings of the mind. Utilizing his background in phonetics, he first sought the understanding of mental phenomena in the interrelationship between speech and thought. By emphasizing the importance of sensation, Rush adhered to the tradition of Locke's "tabula rasa." Human knowledge was derived solely from sensory experience. Rush postulated that thinking arose as a physical function produced by sensory data on the brain. Sensory perceptions determining mental functioning were of 3 types : 1) primary perception ; 2) memorial perception ; 3) joint perception. Primary perceptions were the first constituents of mental life ; the brain perceived outer sensory stimuli in temporal sequence, registering memorial perceptions—the images and universal types that were left behind when "the things which produced the primary perceptions are removed from before the senses." Only when joint perceptions were received could the relationship between individual images and universal types be learned. Joint perceptions were the combined perception of 2 or more primary and/or memorial images.

Rush believed that all mental functioning, in health and disease, could be explained by using this schema. An orderly registering of sensory experience enabled the human being to gain a sense of time and space. Language developed as a series of verbal signs for every primary perception. By imitation, the human voice was able to transmit these verbal signs of primary perception.

Dreams and insanity were explainable in James Rush's conceptual framework. In dreams primary perception did not exist ;

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the dreamer recalled only memorial perceptions. Anticipating Freud by 35 years, Rush equated the perceptual disturbance in insanity with that seen in dreams, stating that in one type of insanity, which he called memorial insanity, dream-like states were perceived as if they were real. Insanity was defined as an inner perceptual disturbance containing no external disturbing elements.

Not content with explaining the mind and its disorders, James Rush next attempted an early form of character analysis. Unfortunately, his hostile temperament got the better of him, and he used the second part of the book to vent many prejudices. Sample headings included explanations "Of the Popular and Conforming Mind of the Physician," and "Of the Contracted Mind of the Priest." The volume ends with an analysis of Shakespeare's character, concluding that Shakespeare's perceptions, like those of all creative geniuses, were involuntary and inexplicable.

Like his father, James Rush was a brilliant rebel, full of prejudices yet blessed with rare imagination and psychological acumen. He predicted that his books would "lie on the dusty shelf." Unfortunately this proved true, and posterity has not taken notice of his unique talents.

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PSYCHOTHERAPY BY RECIPROCAL INHIBITION

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In the past decade there has been a growing interest in relating the practice of psychotherapy to the principle derived from experiments on learning. Dollard and Miller's book on *Personality and Psychotherapy* (1), published in 1950, did much to stimulate interest and is something of a classic in this field. Another major contributor has been O. H. Mowrer, who has written extensively on this topic(2). A number of articles, too, have been published in the last few years, recording specific cases or therapeutic techniques(3, 4, 5). These techniques have been drawn from such learning theory concepts as conditioned aversion, desensitization and massed practice.

Reciprocal inhibition, one of these specific techniques, was the subject of a book by Wolpe published in 1958(6). The principle that goes by this rather forbidding title is that of extinguishing one response by eliciting another, incompatible response. Wolpe describes the actual use of this principle with a number of patients, chiefly suffering from anxiety reaction, phobic or obsessive-compulsive neurosis, and he reports very impressive results with the technique.

It is interesting to find that our predecessors of a century ago made use of the same psychotherapeutic artifices, though they did not foresee their theoretical significance. A paper(7) presented at the Royal Academy of Medicine in Paris in 1845 describes the treatment of a patient by means of some special manoeuvres, one of which was clearly "reciprocal inhibition."

The author of the paper was F. Leuret, a physician at the Bicêtre, and an ex-pupil of Esquirol. His report concerns the case of

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Thierry, a 30-year-old wine merchant, admitted to the Bicêtre in 1843 with a 10-year history of obsessional thoughts. These had become so bad that he was no longer able to carry on his business. Leuret describes vividly how he laid down the treatment plan to his intern, M. Marcel, along lines taught him by Esquirol. He and the intern played two contrasting roles with the patient. Leuret was stern and demanding, while the intern was the patient's friend and comforter, and appeared to side with him against Leuret.

Shortly after Thierry's admission, Leuret accused him of being lazy, since he found him lying in bed when he made rounds, and ordered him to find some work to occupy him. Leuret also refused to increase Thierry's ration of food, which apparently upset him considerably. After rounds, the intern went back and advised Thierry to read, and learn songs which he could recite to Leuret the next day, and promised to double his food ration without letting Leuret know. Thierry at first rejected this idea, saying that he could never learn a song because of the interference of his "ideas," but the intern went, leaving the impression that he relied on Thierry to follow his advice.

The next day Thierry had made a fair attempt to do the work, but Leuret acted as though he was unimpressed and demanded that he work much harder. The intern was sympathetic with Thierry, but pointed out that they would both get into trouble if Leuret found that his food ration had been increased and he had not done the work expected of him.

The third day, Leuret was again unimpressed with the amount of reading Thierry had done, and his attempts to recite, and angrily cut the food allowance on finding the intern had increased it. By the following day Thierry had learnt a few lines to recite, and had done quite a bit of reading. Leuret seemed satisfied, and ordered that the food allowance be increased. Thierry was very happy and promised to learn the song he was assigned for the following day. At the next rounds Thierry sang four couplets of the song, but Leuret asked for renewed efforts and for several days after this Leuret acted as though he was far from satisfied and again cut the food allowance.

This regime continued for about 6 weeks, with Thierry's recitals and other work steadily improving, but never quite catching up with Leuret's expectations. Meanwhile, he apparently experienced less and less interference in his assigned tasks from his obsessional thoughts, and tended less and less to repeat himself in his recitals. At the end of the 6 weeks Leuret asked him about his repetitive ideas and Thierry told him that he had not had them for several days, and that he felt much better. After 2 more weeks in the hospital Thierry was discharged, still greatly improved. Leuret found him work as a nurse to one of his patients, and he reported that a year later Thierry was well and a very successful nurse.

In discussing his method of treatment Leuret confines himself to one very interesting problem, the question of the mentally ill patient's motivation to get well. He points out that the physically ill patient often seeks out instinctively what will relieve his sickness, *e.g.*, the rheumatic patient will rest, while the mental patient tends to do what will make him worse. This raises the question of how the psychiatrist can lead the patient to behavior which will have a salutary, rather than harmful, effect without antagonising or frightening him. Leuret remarks that the physician has to draw on whatever strengths or weaknesses the patient has in order to motivate him to recovery, and he refers specifically to the use of a patient's hunger drive, which he had certainly illustrated in the treatment of Thierry. More generally Leuret comments that the psychiatrist has to be subtle and even devious in bringing patients back to their right mind. I presume that here he is referring to the use of such manoeuvres as the role-playing that he and his intern carried off with such effect in the handling of Thierry.

Leuret does not specifically discuss his technique of blocking the obsessional thoughts of his patient by inducing him to do hard mental work, though, as I have indicated, he was well aware of how the patient's "drive state" had to be manipulated in order to do this. In a general way, this substitution of a healthy activity for pathological behaviour was a guiding principle of the "moral treatment" era, which relied heavily on farmwork, handiwork, edifying lectures and so on, for all classes of patients. But I believe that this report of Dr. Leuret's deserves to be recognised as anticipating our sophisticated psychotherapeutic techniques of today, because he presents a specific tech-

nique to be followed with a specific type of patient, rather than a general method for use with all patients. The resemblance between Leuret's method and that which Wolpe describes in his book *Psychotherapy by Reciprocal Inhibition* is very striking. In fact it would seem that Leuret unwittingly used exactly the same principle, and with the same kind of patient.

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COMMENTS

SOVIET PSYCHIATRIC NOMENCLATURE

NATHAN S. KLINE, M.D., F.A.C.P.,[1] MARK G. FIELD, PH.D., F.A.S.A.,[2] AND JASON ARONSON, M.D.[3]

As cultural contacts between East and West continue to expand, it becomes increasingly important for the two sides to be sure they speak the same scientific language, *i.e.*, that the words and phrases, once they have been translated, mean the same things. It is particularly critical, in making cross-cultural surveys or comparative studies, that we do not compare apples with pears, and make judgments accordingly. The visit of two eminent Soviet psychiatrists [4] to New York City (who were part of a six man delegation to a Joint Meeting of the Academy of Medical Sciences of the USSR and the New York Academy of Sciences) afforded us a unique opportunity to discuss two papers on Soviet psychiatry (1, 2) we recently had written. We questioned them at some length on problems that we had some doubts about and particularly discussed one question that often proves most baffling in comparative work: that of diagnostic categories or labels. It is generally accepted that this is a problem that plagues us at home when we compare statistics issued by two different authorities, or even two different hospitals. In international contacts and comparative research the problem is compounded by the problem of translation, cultural differences and dissimilar psychiatric and therapeutic orientations. For example, no reports equivalent to *Patients in Mental Institutions* issued by the Department of Health, Education and Welfare, Public Health Service could be found for the Soviet Union. Our queries on the subject brought forth the response that statistics were available "somewhere," but that for reasons our respondents did not presume to understand these were not being made public by the Ministry of Health USSR, the logical authority to do so. The one table on hospitalized patients in the Soviet Union we had been able to find had been published by Professor Snezhnevskii but was extremely poor and vague since it purported to represent percentages of "hospitalized patients" (1950-1954) and yet did not give: 1. total numbers of patients the figures represented; 2. breakdowns by age; 3. by sex; 4. by area; 5. by admissions, readmissions, discharges and death. While our respondents deplored the lack of better statistical data, they did shed some light on the question of diagnostic categories. Our comparisons had been hampered by the fact that the Soviet sources listed either 17 or 19 such categories as against the more than 30 used in the American standard nomenclature. We were interested in finding out whether the manner in which we had collapsed the U. S. categories into the Soviet ones was essentially correct. It emerged from the conversation that this had been the case except for a few minor points. It was suggested, for example, that our assumption that the American "Birth Trauma" category which we had classified under the Soviet category of "Traumatic Psychoses" would better fit under the Soviet category of "Oligophrenia."

One of the most interesting and unexpected placement of patients was in respect to the group we know as paranoid states or paranoia. Since no such category is used in the Soviet statistics we had surmised that they would be subsumed under schizophrenia.

According to our respondents, however, patients with fixed but limited paranoid delusions who are free of hallucinations and who show no "primary changes" belong under classification 18 (reactive disorders) since this is where, in the Soviet Union, transient paranoid episodes and paranoia are listed. There must be other changes in

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Standardization of Soviet and American Psychiatric Diagnosis

SOVIET CATEGORIES [a]	AMERICAN CATEGORIES [b] (CODE NO.)
1. Schizophrenia	Schizophrenic reactions (22)
2. Epilepsy	Acute brain syndrome associated with convulsive disorders (05). Chronic brain syndrome associated with convulsive disorders (16).
3. Manic-depressive psychosis	Affective reactions (21).
4. Brain circulatory disturbances or cerebral arteriosclerosis and other circulatory disorders	Acute brain syndrome associated with circulatory disturbances (04). Chronic brain syndrome associated with circulatory disturbance (15).
5. Pre-senile psychoses	Involutional psychotic reactions (20).
6. Senile psychoses	Chronic brain syndrome associated with disturbances of metabolism, growth or nutrition; with senile brain disease (17.1).
7. Lues or cerebral syphilis	Chronic brain syndrome associated with central nervous system syphilis: Meningovascular (11.1). Other central nervous system syphilis (11.2).
8. Progressive paralysis	Chronic brain syndrome associated with central nervous system syphilis: Meningoencephalitic (11.0).
9. Psychosis with infectious or virus diseases or infectious psychosis	Acute brain syndrome associated with infection (01). Chronic brain syndrome associated with intracranial infection other than syphilis (12).
10. Intoxication psychoses	Acute brain syndrome associated with intoxication: Drug or poison intoxication, except alcohol (02.2). Chronic brain syndrome associated with intoxication: Drug or poison intoxication, except alcohol (13.1).
11. Alcoholic psychosis and chronic alcoholism	Acute brain syndrome associated with intoxication: Alcohol intoxication (02.1). Chronic brain syndrome associated with intoxication: Alcohol intoxication (13.0). Sociopathic personality disturbance: Alcoholism (addiction) (52.3).
12. Narcomania	Sociopathic personality disturbance: Drug addiction (52.4).
13. Mental disorders with diseases of the internal organs	Acute brain syndrome associated with metabolic disturbance (06). Chronic brain syndrome associated with disturbance of metabolism, growth or nutrition; with other disturbance of metabolism, etc., except pre-senile brain disease (17.3)
14. Mental disorders (including neuroses) with brain trauma	Acute brain syndrome associated with trauma (03). Chronic brain syndrome associated with trauma: Brain trauma, gross force (14.1). Following brain operation (14.2). Following electrical brain trauma (14.3). Following irradiational brain trauma (14.4). Following other trauma (14.5).
15. Psychoses with organic trauma	Acute brain syndrome associated with intracranial neoplasm (07). Chronic brain syndrome associated with new growth (18).
16. Oligophrenia (including birth trauma)	Chronic brain syndrome associated with diseases and conditions due to prenatal (constitutional) influence (10). Chronic brain syndrome associated with trauma—Birth trauma (14.0). Mental deficiencies (60-62).
17. Psychopathy (ies)	Sociopathic personality disturbance: Antisocial reaction (52.0). Dysocial reaction (52.1). Sexual deviation (52.2).
18. Neuroses, psychoneuroses and reactive disorders	Paranoid reactions (23). Psychophysiologic autonomic and visceral disorders (30-39). Psychoneurotic disorders (40). Personality pattern disturbance (50). Personality trait disturbance (51). Special symptom reaction (53). Transient situational personality disorders (54).
19. Others: neuropsychiatric, examination cases, and undetermined diseases	Acute brain syndrome with disease of unknown or uncertain cause (08). Acute brain syndrome of unknown cause (09). Chronic brain syndrome associated with disturbance of metabolism, growth or nutrition. Presenile brain disease (17.2). Chronic brain syndrome associated with diseases of unknown or uncertain cause; chronic brain syndrome of unknown or unspecified cause (19). Psychotic reaction without clearly defined structual change other than above (24).

[a] According to Snezhnevskii, "Dispensary Method of Registering Psychiatric Morbidity and the Soviet System of Psychiatric Service," Living Conditions and Health, v. 1, No. 4, pp. 236-241, 1959.

[b] According to American nomenclature(3).

personality beside the paranoid delusion in order to establish a diagnosis of schizophrenia. In the absence of such changes, it is assumed that the paranoid delusions are psychogenic.

In psychiatry more than in any other medical field a direct translation of diagnostic terminology is not completely satisfactory. Translation must be supported by an understanding of the different cultures, political

institutions, medical organizations and social structures of these two industrial societies. In the psychiatric field this understanding can come from an extensive reading of the literature, both medical and nonmedical, from direct contacts and interviews between American and Soviet specialists, and from stays of at least 6 months or more in each other's country. Brief contacts, 30-day whirlwind tours, and presentation of papers at international meetings can only serve to begin the personal bridges over which long-term relationships can be established. In any case mankind can only benefit from increased contacts between medical men of East and West, as their concern is always a common one.

The table opposite lists usual Soviet diagnostic categories and corresponding APA categories(3) in parallel columns.

Copies of a table comparing the USPHS and Soviet categories as well as the categories proposed by Kerbikov, Ozeretskii, Popov, and Snezhnevskii in their recent *Textbook of Psychiatry* can be obtained by writing to the authors.

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LIFE LINE

Blow on the coal of the heart.
The candles in churches are out.
The lights have gone out in the sky.
Blow on the coal of the heart
And we'll see by and by . . .

—Archibald MacLeish

OFFICIAL REPORT

REPORT OF THE CHAIRMAN OF THE BOARD OF TELLERS

The Board of Tellers of the American Psychiatric Association here presents the successful candidates as determined from counting the recent mail ballot.

For President-elect, Dr. C. H. Hardin Branch of Salt Lake City, Utah.

For Vice-President, Dr. Henry W. Brosin of Pittsburgh, Pennsylvania.

For Vice-President, Dr. Titus Harris of Galveston, Texas.

For Secretary, Dr. Harvey J. Tompkins of New York, New York.

For Treasurer, Dr. Addison M. Duval of Jefferson City, Missouri.

The contest for Councillors was strikingly close. Of the six candidates presented by the Nominating Committee, the five highest scores showed a spread of only 630 out of 5000 votes!

This may well be considered a credit to the Nominating Committee and to the thoughtful voting of our membership.

You have elected for Councillors:

Dr. Alfred Auerbach of San Francisco, California.

Dr. Herbert S. Ripley of Seattle, Washington.

Dr. Cecil Wittson of Omaha, Nebraska.

The statistical report of the Board of Tellers has been filed with the Secretary of the American Psychiatric Association at the central office.

Our President, Dr. Robert H. Felix, on transferring the gavel into the able hands of our incoming President, Dr. Walter E. Barton, becomes a voting member of Council by constitutional provision.

The Board of Tellers is indebted to our Executive Assistant, Mr. Austin Davies, and to his staff of the New York office for their efficient service as Custodian of Ballots and for their generous and gracious cooperation in serving as members of the vote-counting teams.

I should like to express appreciation to each member of our Association who relayed their reactions to the election procedures through comments on ballots, in letters, or in conversation. These communications enabled the Board to make recommendations based upon the opinions of APA members.

A brief review will remind us of the changes in election procedure within the last 10 years, to adapt to the developing requirements of a rapidly growing organization. Our membership has almost doubled within this decade.

For many decades open poll voting at the Annual Meetings presented an increasing problem. Furthermore, it limited the franchise to those attending the Annual Meeting, a small proportion of the total membership. Constitutional changes provided the mechanism for the first mail ballot in 1952.

The report of the Board of Tellers in those years was rendered at the Annual Meeting on a large blackboard with each name and its numerical count. For obvious reasons, change was indicated. In 1958, constitutional amendments provided that the Board of Tellers should announce the successful candidates only. The complete statistical report of the Board of Tellers with numerical data was to be filed with the Secretary of the Association where it would be available to individual members upon request.

Beginning with 1958, the Chairman of the Board of Tellers, aware of the feeling about election mechanics through comments and personal communications, conducted interviews with American Psychiatric Association members to obtain constructive opinions. Individuals from many geographic areas as well as different classes of membership, and with varying types of experience within the APA were included in the sample. Recommendations based on the information obtained as well as on the awareness of the increasing burden for the Board of Tellers were considered by Council.

In 1960 the Council approved three changes:

1. That the ballots for officers offer the member a choice of unit affirmation of the

panel proposed by the Nominating Committee or the opportunity to vote separately for individual officers.

2. That the Chairman of the Board of Tellers be consulted about the format of the ballot to facilitate counting.

3. That biographic data for nominees be included on the ballot. "The biographic data would consist of : the individual's present position, any APA Committee Chairmanship and elected positions held in the past ; and positions held in the Assembly of District Branches."

This year 55% of the ballots mailed were returned.

Of the voting members, 96% utilized the unit vote for officers.

Only two ballots for councillors indicated that the member felt he had insufficient knowledge upon which to base a decision.

To answer some of the questions frequently raised, the Chairman of the Board of Tellers made a study of the tallies for the past 5 years. This has revealed enough correlation between election and ballot position to warrant further consideration. With respect to contested Councillor elections, the most dramatic finding can be told simply.

No candidate in the number 1 position ever lost ! That is, the candidate first on the ballot (position 1) won consistently in each of the 5 years. Since candidates are arranged alphabetically (according to constitutional provision), a member whose last name begins with a letter near the head of the alphabet gains undue advantage.

The member in position 3 was successful in 4 out of 5 elections.

Does this mean that the candidate at the bottom of the alphabet is also at the bottom of the tally ? No, it doesn't. The candidate listed last on the ballot won 3 out of 5 years. Of these 3 years, only twice did the Nominating Committee offer six candidates (1957 and 1961). The candidates in that position won both times, representing a 100% success for position 6. The nominee in the 5 position won 2 out of 5 years as did the member in the number 2 spot.

There was, however, a hard-luck spot. That was position 4. *No candidate in position 4 ever won an election !*

The 1961 election was no exception. As mentioned above, only 630 votes separated the top candidate from the next to the bottom one. But, 600 votes separated the latter from the low man who, as usual, was in position 4.

Position 1, 2, and 3, traditionally supposed to be the winning combination, has been so only twice during the past 5 years. In both instances there were five nominees.

Similarly, positions 1, 3 and the last position on the ballot have been winners twice ; in 1957 when there were six nominees and in 1959 when there were five.

The 1st, 5th and 6th candidates listed on the 1961 ballot won (positions 1, 5, & 6)—the only success for this combination of positions.

On May 7, 1961, I presented this report to Council. In view of the apparent advantage of positions 1 and 3, and the disadvantage of position 4, I recommended that the APA abandon the current practice of alphabetical listing of candidates. Council received this recommendation understandingly, and is working on plans for its implementation.

The role of alphabetical position may be shown in another way. Of total APA membership, 64% have names in the A to M bracket, and 36% have names in the last half of the alphabet. If alphabetical position did not play a role, one would expect that our officers and Councillors would show about the same distribution : 64-36.

But 12 of the 15 elected Councillors—that is 80%, belong in the first half of the alphabet. And our present Officer-Councillor leadership shows a 73-27 distribution instead of the theoretically expected 64-36 ratio. Two of the three Councillors making the 20% minority (N-Z) referred to above were elected in 1961.

The fact that all three of 1961's victors were from the West raises the question of geographical distribution.

The new members of Council will effect some shift in the present proportion of 74% from the east and 26% from the west of the Mississippi, among our present officers and members of Council (30 in all).

Four of our current officers and members of Council, or 13%, are from south of the Mason and Dixon line. The remaining 87% includes two from Washington, D. C. and one from Canada.

The distribution of our governing body according to area is :

Area 1—Twelve : six voting and six ex-officio.

Area 2—Four : all voting.

Area 3—Five : two voting and three ex-officio.

Area 4—Five : four voting and one ex-officio.

Area 5—Four : two voting and two ex-officio.

The Board of Tellers welcomes your continued comments, reactions, and suggestions. Such communications from the membership are of value to our elected leaders in obtaining the pulse of our organization and in prescribing wisely and officially for its continued growth and maturity.

Evelyn Parker Ivey, M.D.,
Chairman.

NO—YES

When words are found to be a roundabout way of communication, the Zen master may utter "Katz !" without giving what is ordinarily considered a rational or intelligible reply.

In the same way, when told that he looks like a dog, he will not get excited and make an angry retort. Instead, he may simply cry "Bow-wow," and pass on.

—D. T. Suzuki

NEWS AND NOTES

New Mental Health Traineeship for Graduate Nurses.—The traineeship program of the National Institute of Mental Health was recently extended to include an undergraduate traineeship for graduates of diploma schools of nursing who are interested in a career in psychiatric-mental health nursing. These traineeships are available in schools participating in the National Mental Health Training Program, and provide an annual stipend of $1,800 plus such tuition and registration fees as required by the educational institution.

This program continues to provide several levels of traineeship support for nurses seeking specialized graduate preparation in universities offering programs to prepare individuals for expert clinical practice, teaching, administration, consultation and research in colleges and universities, and in hospitals and community and public health agencies. Stipend support is provided for training leading to the master's and doctor's degrees.

For further information write to the Training Specialist in Psychiatric Nursing, Training Branch, National Institute of Mental Health, National Institutes of Health, Bethesda 14, Md.

Canadian Mental Health Association Annual Meeting.—Growing public interest in the field of mental health was indicated by the impressive attendance at the 43rd annual meeting of the Canadian Mental Health Association, June 1, 1961.

The program was significant in that its total focus was on the Association's scientific research program. Scant attention was paid to the traditional emphases on improving mental hospital care and the volunteer services to the sick. The program attracted a large group of people from the social, industrial and business leadership of Canada. More than 200 attended the public symposium to hear Drs. Omond Solandt, Noël Mailloux o.p., and Patrick McGeer, discuss research in the field of mental health. In the evening at the Association's annual banquet, nearly 350 people heard Dr. Daniel Blain, director of California's mental hygiene department.

Accepting chairmanship of the board of directors after serving 6 years as national president, J. S. D. Tory, QC, mentioned that a professional survey 4 years ago gave little encouragement of financial support for the unique approach to research proposed by the CMHA. Each year, however, has shown that contributions to the mental health research fund have been growing. It is anticipated now, that this research plan will prove to be successful and important.

Under the CMHA plan, funds are allocated to *persons*, instead of the traditional pattern of granting to *projects*. The amount is large enough to assure income to the recipient for 3 or 4 years and it is paid directly to him. In this period the scientist is totally free to follow whatever leads develop from his research, without having to redefine the work in which he is engaged. Dr. Mailloux, a psychologist, and Dr. McGeer, a psychiatrist and biochemist, were the first beneficiaries of the Fund. Dr. Solandt, a vice-president of Canadian National Railways and formerly director of Canada's Defence Research Board, was director of the Fund in 1960.

Dr. Blain's address reported on the philosophy and growth of community mental health services in California.

Growth of the Canadian Mental Health Association was highlighted in a review by the President of his 6 years of service. From less than 2000 in 1954, the membership had grown to 125,000 in 1960. Income had increased from about $100,000 in 1954 to $700,000 in 1960.

The Association's annual report—an 8-page summary designed for ready reading—was presented at the meeting and is now available upon request by writing to the Association at Box 555, Toronto 5.

American Academy of Child Psychiatry.—At the recent annual meeting of this Society in Chicago Dr. James M. Cunningham of Dayton, Ohio, was installed as

president and Dr. Reginald S. Lourie, head of psychiatry at Children's Hospital, was named president- elect. Dr. Joseph Weinreb was elected secretary and Dr. Abram Blau, treasurer.

THE MODERN FOUNDERS.—Dr. and Mrs. Francis Gerty were hosts at the annual luncheon meeting on Wednesday during meeting of the APA. The speakers included Doctors Barton, Bond, Lebensohn, Ross, and Mr. O'Mara, the new APA Librarian-Archivist.

New Founders awarded certificates were : Doctors A. Auerback, Ed. Billings, Hardin Branch, Hamilton Ford, Walter Obenauf, John Saunders, and Harry Solomon.

Officers elected for the coming year are : Chairman, Dr. Leo Bartemeier, Vice-Chairman, Mrs. Daniel Blain, and Secretary-Treasurer, Dr. Bob Mearin.

DR. FARQUHARSON TO DIRECT CANADIAN MENTAL HEALTH ASSOCIATION RESEARCH FUND 1961.—Dr. R. F. Farquharson, Professor Emeritus of Medicine, University of Toronto, and chairman of the Medical Research Council of Canada, has accepted the direction of the C.M.H.A. research fund for the coming year. He will select the applicant to receive this annual grant which now amounts to $25,000.

WESTERN INSTITUTE ON EPILEPSY.—The 13th annual conference of the Western Institute on Epilepsy has been scheduled for October 11 through 14, 1961. These meetings are to be held at the Granada Hotel and Inn at San Antonio, Texas.

The papers will deal with the clinical, biochemical, neurophysiologic, psychological and electroencephalographic aspects of epilepsy.

For information address Frank Risch, Ph.D., Secretary-Treasurer, 3097 Manning Ave., Los Angeles 64, Calif.

AMERICAN PSYCHOSOMATIC SOCIETY.—At the annual meeting of the American Psychosomatic Society April 28-30, 1961, Atlantic City, the following persons took office : President, Stewart Wolf, M.D. ; President-elect, Julius B. Richmond, M.D. ; Secretary-Treasurer, Eugene Meyer, M.D. ; Elected to Council were, Morton D. Bogdonoff, M.D., Stephen Fleck, M.D., Adrian M. Ostfeld, M.D., Alvin P. Shapiro, M.D.

The 19th annual meeting of the Society will be held March 31-April 1, 1962, in Rochester, N. Y.

KYBERNETIK.—This new Journal, the first issue of which appeared in January, 1961, deals with the "transmission and processing of information and with control processes in both organisms and automata."

It is edited by H. B. Barlow, Cambridge, Eng., M. Halle, W. A. Rosenblith and N. Wiener, Cambridge, Mass., B. Hassenstein, Freiburg i.Br., W. D. Keidel, Erlangen, I. Kohler, Innsbruck, K. Küpfmüller, Darmstadt, H. Mittelstaedt, Seewiesen, Obb, W. Reichardt, Tübingen, J. F. Schouten, Eindhoven, M. Schützenberger, Poitiers, K. Steinbuch, Karlsruhe.

The publisher is Springer-Verlag, Berlin, Göttingen, Heidelburg.

Contributions may be in German or English. Maximum price for 1961: DM 80.

The initial number of *Kybernetik* contains papers on Processing in the Nerve Cell for regulating Voluntary Movements," Letter Constraints within Words in Printed English, Pawlow and his Dog, a Demonstration Model for the "Conditioned Reflex," and four other contributions.

This issue, 56 pp. (9 pp. in English), 72 charts, diagrams, tracings, *etc.*

ILLINOIS PSYCHIATRIC HOSPITAL.—On March 15, 1961, the following members of the Illinois Psychiatric Society were elected to office for the year 1961-1962 : President, Dr. Melvin Sabshin ; President-Elect, Dr. Lester Rudy ; Secretary-Treasurer, Dr. Harold Visotsky ; Councilors, Dr. Joel S. Handler, Dr. John Adams ; Delegate to American Psychiatric Association Assembly, Dr. Jewett Goldsmith ; Alternate Delegate, Vacant—to be filled in September 1961.

AMERICAN BOARD OF PSYCHIATRY AND NEUROLOGY, INC.—The following examinations are scheduled by the American Board

of Psychiatry and Neurology, Inc.: Oct. 9 and 10, 1961—Chicago, Ill.; Dec. 11 and 12, 1961—New York, N. Y.; and April 2 and 3, 1962—San Francisco, Calif.

Vestermark Fellowships to be Continued.—The Smith Kline & French Foundation has announced an additional grant of $10,000 for the continuation of the APA's Vestermark Fellowships, under which selected medical students are provided with the opportunity for full time work in public mental hospitals during the summer months. This grant brings the amount awarded by the SK&F Foundation to the APA for various fellowships in psychiatry during the past 6 years to $200,000.

Applications should be submitted directly to the SK&F Awards Committee at the APA Central Office, 1700 18th Street N.W., Washington 9, D. C.

Dr. Diamond Heads Manhattan State Hospital.—Dr. Oscar K. Diamond was appointed Director of Manhattan State Hospital, Ward's Island, effective May 15, 1961.

Dr. Diamond entered the New York State service in 1946 and served as assistant director at Creedmoor State Hospital for 5 years previous to the present appointment.

A. E. Bennett Neuropsychiatric Research Foundation Award.—At the annual meeting of the Society of Biological Psychiatry in Philadelphia, June 11, 1961, Dr. Larry Stein, a research psychopharmacologist at Wyeth Laboratories, Philadelphia, received the A. E. Bennett award of $500 for his research report on a possible neurophysiological basis of depression.

Dr. Stein was previously associated with the Walter Reed Army Institute for Research and the VA Laboratories in neuropsychiatry.

National Association for Mental Health.—Under numerous and striking gains in this field during the past decade as noted by the president of N.A.M.H., Mrs. Felex Dupont, Jr., in the annual report of the Association, most striking are:

The estimate that patients entering mental hospitals with diagnoses of schizophrenia, manic-depressive or involutional psychosis now have a 65% possibility of returning to community life within a few months.

Also that greater numbers of psychiatric cases are now treated in community-based centers. More than 950 general hospitals in the United States operate psychiatric units. An increasing number of communities have outpatient clinics for both adults and children as well as aftercare centers for the follow-up of patients discharged from hospitals.

Open-Staff Psychiatric Hospitals.—In June 1962 a meeting will be held at the Institute of the Pennsylvania Hospital when the question of open-staff privileges in psychiatric hospitals similar to those in general hospitals will be considered by psychiatrists assembling from a majority of the states.

Dr. Lauren A. Smith, physician-in-chief of the Institute, commenting on the fact that certain psychiatric hospitals, including the Institute of the Pennsylvania Hospital, have made concessions in the direction of open-staff hospitals, indicates the advantage of permitting not only referring psychiatrists but also the family doctor to collaborate with the staff in patients' treatment.

Dr. Walter E. Barton, president of the APA will lead the panel of speakers.

The Smith Kline and French Laboratories of Philadelphia are to underwrite the cost of the meeting.

The American Neurological Association.—At the 86th annual meeting of this Association held in Atlantic City, N. J. on June 12-14, 1961, total registration was 626. The following officers were elected for the year 1961-62: President, James L. O'Leary, St. Louis, Mo.; President-Elect, Charles D. Aring, Cincinnati, Ohio; 1st Vice-President, Francis L. McNaughton, Montreal, Canada; 2nd Vice-President, Robert S. Schwab, Boston, Mass.; Secretary-Treasurer, Melvin D. Yahr, New York, N. Y.; Assistant Secretary, Clark Millikan, Rochester, Minn.; Editor of Transactions, Melvin D. Yahr, New York, N. Y.

Dr. Harold Wolff was elected to the Council for 5 years; Dr. Fred Plum for 2 years. Dr. Charles Rupp was appointed representative to the American Board of Psychiatry and Neurology for 4 years, and Dr. Derek Denny-Brown as representative to the National Research Council for 3 years.

The 87th annual meeting will be held June 18-20, 1962 at the Claridge Hotel in Atlantic City, N. J.

THE WESTERN DIVISIONAL MEETING—APA.—The meeting will be held in Salt Lake City, Utah, Sept. 21-24th, 1961. An elaborate program has been provided: Dr. Hardin Branch will moderate a symposium on the morning of Sept. 22, State Frontiers of Psychiatry, discussed by representatives of the various states.

The Academic lecture will be delivered by Dr. Henry W. Brosin at 1:00 a.m., Sept. 23.

A special feature of the meeting will be a "Tour of the Centre of Scenic America," beginning at 1:30 p.m., Sept. 22, 1961 and including a 7:00 p.m. Western dinner *en route*. The cost of this feature, covering afternoon and evening, is $10.00 per person.

The West Coast Group Therapy Association meets concurrently Sept. 24, 1961.

CORRECTION

There was an error in the last sentence of the first paragraph of the book review of *American Handbook of Psychiatry*, edited by Silvano Arieti, page 1051, May 1961. That sentence should read:

There are useful contributions by Hans Strauss on Epileptic Disorders, by Henry Brill on Postencephalitic Conditions and on Psychoses with Huntington's Disease by Bigelow, Roizin, and Kaufman.

CREDULITY

Precious perquisite of the race, as it has been called, with all its dark and terrible record, credulity has perhaps the credit balance on its side in the consolation afforded the pious souls of all ages and of all climes, who have let down anchors of faith into the vast sea of superstition.

—OSLER

BOOK REVIEWS

Child and Juvenile Delinquency. Edited by *Benjamin Karpman, M.D.* (Washington, D. C.: Psychodynamics Monograph Series, 1959, pp. 364. $10.00.)

This book presents now in collected form the papers, comments and discussions that comprised 5 symposia held at Orthopsychiatric meetings in the early 1950's. The contributors were several outstanding workers drawn mainly from the psychiatric discipline.

The first 3 symposia deal with the somewhat vexed and uncomfortable concept of the child psychopath in terms of definition, etiology, psychopathological phenomena, frequency of occurrence and treatability. On only one of these points, the relatively gloomy prognosis, do nearly all speakers agree. For the rest, the opinions are as diverse as the approaches presented, which vary from the convinced endocrine-organic to the equally convinced psychoanalytic. It is, however, refreshing to find expressed by all, the present lack of any proven definitive statements or conclusions and a knowledge of the inadequacies of any and every approach to this thorny problem.

The latter 2 symposia deal with the more frequent delinquent problems, the first with the older and the second with the younger "predatory" delinquent. As in the first three, the contributors speak from a wealth of experience and add, by a variety of views, a roundedness to the consideration of "pyschodynamics" and "basic emotional factors."

Although at times, the differences appear to be less of fact than of approach, there is little attempt to find any common ground and one is left with a series of well-stated convictions. No new ideas of any material consequence are presented—indeed, in its whole 368 pages, no tables appear except some profiles by Spitz. One can well empathise with Wechsler's lone cry in the wilderness for more rigid methods of research and verification. In addition, though there is common agreement on the importance of social factors, no voice is heard from the discipline of sociology.

It is impossible to discuss this book without referring to a grating tendency that increases throughout it, namely to summarize everything and then summarize the summary ad infinitum. This reaches its height of annoyance when the "summary" takes a complete sentence from the paper and repeats it—on the facing page (p. 124-125). Unfortunately, this detracts from the real merit of the attempts to synthesize the divergent views that lie within these repetitious sections. The application of editorial rigor would have improved the overall value and impression even were it at the expense of the retention of spontaneity that publication "in full" may try to encompass.

Despite its drawbacks, the book represents a solid and conscientious attempt to present the many facets of work in the field at that time—a distillate of experience and opinion from those whose work entitles them to speak as representatives of a variety of divergent views.

Quentin Rae Grant, M.B., Ch.B.,
Children's Psychiatric Service,
Johns Hopkins Hospital,
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Einführung in die Psychiatrie. By *Kurt Kolle.* (Stuttgart: Georg Thieme Verlag, 1960, pp. 92. DM. 6.80. $1.60.)

Professor Kolle, who is director of the Psychiatric and Neurological Clinic of the University of Munich, has prepared three texts adapted primarily for use of medical students. This one may be regarded as a primer or guidebook to lighten the task of students coming newly into the psychiatric clinic.

Later on when the student has become somewhat acquainted with the subject and has seen many cases, he will need the more comprehensive and detailed text, the *Lehrbuch der Psychiatrie.*

Finally, to refresh his memory and make a closer study of cases he has seen in the clinical demonstrations he may turn to the third volume containing presentation of individual cases. In this last book Professor Kolle emulated the useful pattern of his predecessor, Kraepelin, in the latter's *Einführung in die Psychiatrische Klinik.*

In the present small *Wegweiser* Kolle begins with a brief notice of the main names in psychiatric history of the 19th and 20th centuries.

Next comes the subject of classification, the foundations of which were laid by Kraepelin, affording a system of medical diagnoses—*Ohne Diagnose Keine Therapie.*

The table of diagnoses in the narrower sense will however be confusing for the beginner. Therefore the author brings all psychic abnormalities together in 6 large groups: 1. Abnormal or psychopathic personalities. 2. Endogenic psychoses. 3. Exogenic psychoses. 4.

Acquired psychic disorders. 5. Diseases of the nervous system. 6. Disorders of the sympathetic nervous system. Brief commentaries accompany the several divisions.

It is necessary to acquaint the student with the dilemma of trying to align pathologic psychic states with somatic conditions. Innumerable futile attempts have been made to cut this Gordian Knot, which ultimately takes the shape of the body-mind question itself. To approach it by way of philosophy may satisfy the mind of the philosopher. Kolle mentions a late luminary in this field : Heidigger, whose existential philosophy has been seized upon by certain psychiatrists to resolve the dilemma. This area of speculation Kolle calls a "Nomansland," whence the spoils that adventurers bring home are only *"dürftig und einförning."*

Discussing diagnosis (3 pp.) Kolle contrasts the relative precision of diagnosis based on organic physical and neurological findings with the extreme vagueness of diagnosis based on other factors.

Under treatment (24 pp.) is reviewed for the student all currently available procedures, including psychotherapy, with a somewhat ambivalent critique of psychoanalysis, together with methods that require institutional care. Opportunities for research are particularly stressed ; likewise the standpoint that psychiatry and neurology constitute a united field as part of the whole discipline of medicine.

C. B. F.

Recent Advances in Biological Psychiatry. Edited by *Joseph Wortis, M.D.* (New York & London : Grune & Stratton, 1960. $13.50.)

To most British psychiatrists, too much American psychiatric literature now seems to consist of the repetitive dialectics of well-indoctrinated Freudians, and therefore this book comes as a particularly welcome and appropriate reminder of the existence of a less vocal but very active minority striving for progress along lines much more likely to produce the new and really practical treatments of the mentally ill.

The book contains a veritable mass of facts and new observations along a variety of biological approaches to our psychiatric problems, and records what must have been a very special meeting of the Society of Biological Psychiatry in 1959. The Havelock Ellis Centenary, for instance, prompted an interesting symposium on sexual behaviour and impulse in man and animals, including a discussion of the importance of early imprinting as a cause of later sexual deviation. There is also a most instructive round table discussion on the toxic theories of schizophrenia. The hallucinogenic drugs come in for special examination, including attempts to try to understand better the actual biochemistry of LSD psychosis. Kalinowsky appraises the tremendous practical treatment advances brought about by the somatic therapies, including the new tranquillizing and antidepressant drugs. Even the neurology of motivation is chosen for the Presidential Address, and a whole section of the book is devoted to a study of conditioning seen electroencephalographically in man and animals ; other studies in neurology and physiology are given a whole 70 pages.

If only there were a few more volumes like this, we should certainly start to get very much nearer to helping a lot more of the patients now crowding the mental hospitals of both our countries.

William Sargant, M.D.,
St. Thomas' Hospital,
London, England.

The Caricature of Love. By *Hervey Cleckley, M.D.* (New York : The Ronald Press Company, 1957.)

In the preface to this little volume the author states :

"This book has two chief themes : sexual disorder and its influences, and a critical examination of some concepts of sexuality which are prominent today in psychiatry and psychology. Many psychiatrists, psychologists, and sociologists have, in recent years, taken the position that society should exhibit a more liberal attitude toward sexual deviation. It has been repeatedly maintained that the public and the law are unduly influenced by prejudice and archaic tradition, that aberrant sexual practices are too harshly condemned by our culture."

Dr. Cleckley obviously does not accept this point of view but regards personality disturbances of this type as distinctly abnormal and adds as a subtitle of his book : "A Discussion of Social, Psychiatric, and Literary Manifestations of Pathologic Sexuality." The chief, but not only form of sexual deviation which the author discusses, is homosexuality. He points out that many persons who have contributed much to literature and the arts and who in many respects have contributed to human values have satisfied sexual impulses in this manner. He does, however, in spite of the contributions which such persons have made, believe that persons who indulge in them must be regarded as having personalities which are

pathological and may exercise a disturbing influence on young associates. He quotes from the *Journal of the Americal Medical Association* as follows, in its reply to a question received a few years ago asking if homosexuality is thought to be congenital or acquired : "As such a child (homosexual) grows up he retreats from heterosexuality to homosexuality because of previous fearful associations with heterosexuality." We wonder if this is correct.

The experience of the author has been much like that of most of the rest of us : namely, that these sexual deviates are rarely treated successfully. We also agree with him that science should "avoid using such terms as 'prove' and 'demonstrate' for what is no more than hypothesis, personal taste or speculation."

As one lays down this book he feels somewhat puzzled as to its purpose. Is its purpose to present a really intelligent discussion of sexual deviations or is it to make sport of Freudian theories ? Although many theories proposed by Freud seem to be baseless speculations, yet if they were considered as figures of speech instead of substantiated theories would they not receive more general acceptance ?

Arthur P. Noyes, M.D.,
Norristown, Pa.

And The Poor Get Children. By *Lee Rainwater, Ph.D.* (Chicago : Quadrangle Books, 1960, pp. 190. $3.95.)

Clinics affiliated with the Planned Parenthood Federation of America have been involved for many years with evaluation and prescription of contraceptive methods. Harmlessness, effectiveness and acceptability were the criteria used to evaluate such methods. Sufficient time has been given to prove the efficacy and reliability of the methods tested and prescribed. The concern now is that of acceptability. Various psychological investigations are in progress, or projected, to determine : Why those most in need of contraception do not seek it ; why those who do seek it (and, in so doing, presumably demonstrate a desire to use the prescribed method) but then do not use it ; and why some discontinue the method after a period of time.

In an attempt to answer these questions, the Planned Parenthood Federation of America sponsored a pilot investigation of the psychological factors involved in family planning and contraceptive practices among working class men and women. As stated, 2 broad subjects were covered. 1. Specific attitudes, motives and habits in connection with contraceptive practices. 2. The psychological context of motives, morals and attitudes in other aspects of family living which condition working class behavior in the area of contraception. The sample consisted of 96 working class respondents, 46 men and 50 women, in the reproductive years, living in an urban area, constituting an ethnic and religious cross section, and all married and living with their spouses.

The findings show a concrete correlation between the factors explored and the use and non-use of specific contraceptive methods. Excerpts from some of the interviews are particularly revealing.

From these findings, the challenge is raised to all workers in this field. "It is clear that working class people have a real interest in family planning and limitation. The professional worker who is able to approach them in terms of their realities, their understanding, their anxieties, and goals will stand the best chances of helping them to use effectively their own self interest in contraception."

Lena Levine, M.D.,
Margaret Sanger Research Bureau,
New York City.

An Experiment in Mental Patient Rehabilitation. By *Henry J. Meyer* and *Edgar F. Borgatta.* (New York : Russell Sage Foundation, 1959, pp. 114. $2.50.)

This monograph is a carefully planned evaluative survey of an ambitious pilot project planned by the Executive Director of Altro Health and Rehabilitation Services Inc., Bertram J. Black. The project represented an extension of the services of this agency to include patients discharged from state mental hospitals. The research team narrowed down its selection of the group to be studied to those with the diagnosis of schizophrenia.

The express aim of the project was to determine whether the rehabilitation program offered by the agency, which is carried out and supervised in the environmental setting of a modern garment factory, could be adapted to the re-conditioning of discharged mental patients with the same success as with the after-care of discharged tuberculous and cardiac patients.

Despite the fact that there was a widely expressed conviction that there would be no difficulty in assembling a sufficient number of clients anxious to take advantage of the program, the fact proved to be quite the opposite, with the result that the numbers actually engaged in the rehabilitation were negligible. Consequently, the primary purpose of the project was not realized. From the ashes of defeat, however, rose a phoenix of resourceful

inquiry into the significance of what had been learned about the problems, attitudes, beliefs, and expectations of the clients who had been selected to form their "focal group" (those who would be put through the rehabilitation program) and the control group. Many pointers were found in these areas to suggest that there is a vast amount of work to be done in the field of studying the after-care needs of the discharged mental patient. Above all, it soon became evident that the availability of a potentially sound rehabilitation program does not by any means prove that there will be a waiting list of clients.

Although, therefore, this pilot project failed to produce statistical results of any significance with respect to the possible benefits of the Altro Rehabilitation program in re-conditioning the ex-hospitalized mental patient to meet the ardors of competitive living, a great many observations were made which will be of use to others who plan research in this complex area of human illness.

The application of work therapy for mental hospital patients is not a new or untried auxiliary therapy, either during hospitalization or later. This principle—the principle of re-conditioning disabled persons to the use of injured limbs or of impaired mental faculties through the acquisition of technical skills and the development of increasing work tolerance—has been in application in such widely different settings as the New York State Rehabilitation Hospital and the Rehabilitation Center of the American Rehabilitation Committee for many years. There is, I believe, ample proof of the usefulness of such rehabilitation programs in a wide range of human illnesses. It is well-known to workers in this field that the emotional factors involved in re-conditioning a sick person are of paramount importance, no matter what may be the diagnostic category in which the illness falls. In mental illness this factor is, of course, of absolute and primary importance.

Where this project calls for special commendation, however, is, first, that it represents an attempt at serious evaluation of whether, how, why, and when a certain program can be proven to be adapted to the after-care of ex-hospitalized mental patients; and, second, that the agency called on experts in the field of social science to co-operate with, advise on, and evaluate the implementation of the project. It is one thing for an agency to try to outline sound methods of procedure and to work steadily at implementing its program and at evaluating its own results. It is quite another to take full responsibility for planning and carrying out a pilot research and to subject those who do the work to a continuing and final critical evaluation. Only by such genuine scientific enthusiasm and objectivity can advances be made in such a complex field as the rehabilitation of the ex-hospitalized mental patient. The staff of the agency, the evaluating team, and the Russell Sage Foundation are to be congratulated on a modest but valuable contribution to our understanding of some of the principal leads to be followed in future investigations.

JOHN A. P. MILLET, M.D.,
New York, N. Y.

THE TWO CULTURES AND THE SCIENTIFIC REVOLUTION. By *C. P. Snow.* (New York: Cambridge University Press, 1959, pp. 58.)

In this time of fast-moving social and political changes we are also enjoying (or enduring) a scientific revolution. Sir Charles Snow feels we are as unconscious of it, as poorly prepared for it and have it as weakly integrated socially as our forbears in the case of the industrial revolution. This latest movement is coming inevitably into our lives with changes causing more change resulting in farther revolution, and so on. At least that was the kind of sequence when there were new sources of power, new machines and when a new organization of production began in the 18th and 19th centuries. The earlier revolution was the cause of severe shocks to social systems and national structures, but it was, as Snow puts it, "the hope of the poor," because they at least had a chance of self-improvement though they first had to experience the sweat shops. This scientific revolution consisting of major advances in the electronic fields, atomic energy and automation will not be so important for destroying feudal systems and bringing down aristocracies as it will be hope for the poor *nations* of the world. The social and political upheavals provide the motives for major alteration in the social systems of Africa and Asia. The scientific revolution will provide the means for these changes which will *not* be evolutionary, gradual and spread over several generations. Instead, the people of Africa and elsewhere will soon learn they need not wait for their offspring to enjoy those things the major civilized nations now have. They will want them now or in the near future and their desires will be in the realm of possibility because of the scientific revolution. We have not the excuses of the past for delay and patience because technological advances will make progress a possibility much sooner than we had

expected. We can only hope to have influence upon the direction and shape progress will take in the previously underprivileged areas.

Sir Charles Snow in his Rede Lecture at Cambridge has such an immensely impressive message on matters of overwhelming importance in such reasonably cool language that this reviewer struggles to keep out the sound of trumpets in reporting on it. Snow is a remarkable and versatile man with careers in science, literature and government all of which qualify him for the particular angle used in this book.

A major aspect of our maladaptation to the scientific revolution and of our increasingly apparent inability to use it wisely for stimulating democratic advantage in the underdeveloped countries has been the traditional and growing schism between the humanities and sciences, between the literary men, writers and teachers on one side and the scientific researchers, teachers and technologists on the other. Snow feels these two groups, somewhat artificially dichotomized for his purposes, are as separate as two cultures and he is as an anthropologist reporting on them. From his quelled and reserved atmosphere the literary man has pity and contempt for the quick but shallow ways of the scientist. But the brash and brainy physicist, archetype of his group, with his chaotic blackboard has no time for the writer quaint and old-fashioned as he is, nor for his books either.

As Snow sees it there is both truth and blind prejudice in the opinions of each about the other. The writer is as illiterate about the periodic table as the scientist regarding modern poetry. The best of our writers have been determinedly last in perceiving and accepting social advance. Mistrust of the literary ones deserves sympathy because of the fusty and fiercely backward ideas propounded by Yeats, Pound, Eliot, Faulkner and Robert Penn Warren to mention a few. Then the scientist is too often lacking depth in his feeling and thought about the human condition and the needs and goals of men who are not scientists. The scientists' attitude with many exceptions is too likely to be impatient with things of non-scientific value and to assume that (except for music) art is a kind of plaything, unreal and quite secondary.

The mutually repellent nature of the relationship between these cultures has a disintegrating effect upon education and leads to specialization in trivia. This pulling apart also makes for a lack of ability to coordinate an adaptation to the inexorable scientific revolution. These effects are described by Snow as major sources of the very dangerous delay in our work as humanists *and* scientists in the underdeveloped countries.

I think this book may be of particular interest to psychiatrists because they have in some ways struggled more than others with the division and coordination of humanistic and scientific disciplines.

James L. Titchener, M.D.,
College of Medicine,
University of Cincinnati.

The Science and Medicine of Exercise and Sports. Edited by *Warren R. Johnson.* (New York: Harper and Brothers, 1960, pp. 740. $12.00.)

This is an excellent book for all those interested in the medical and scientific aspects of exercise and sports. Its 42 contributors include many whose primary interest lies in physical education, and in the physiology and psychology of exercise. All present their matter in a readable and well-referenced manner; an extensive bibliography following each chapter. The section on physiological aspects is factual and informative, dealing with each of the body systems, and presenting opinions backed with experimental studies of the effect of exercise on them, and the variations noted under particular circumstances; for example, stress, training, weight-control, climate, altitude and sport diving. The problem of motor development, growth, and exercise in adult years, with special reference to middle and advanced years, are well discussed. The psychological aspects are reviewed, with discussion of the personality dynamics, and the contribution of exercise and sport and of athletic participation to mental health and academic performance. The therapeutic aspects with relation to medicine, rehabilitation of the ill, and as a psychiatric adjunct are well presented.

Apart from the factual presentation of experimental and theoretical data and background, one cannot escape the feeling that the authors believe that exercise and sports are pleasant, worthwhile and beneficial activities, despite the fact that in no place are they guilty of biased presentation or of extravagant claims.

G. E. Wodehouse, M.D.,
University Health Service,
Toronto, Can.

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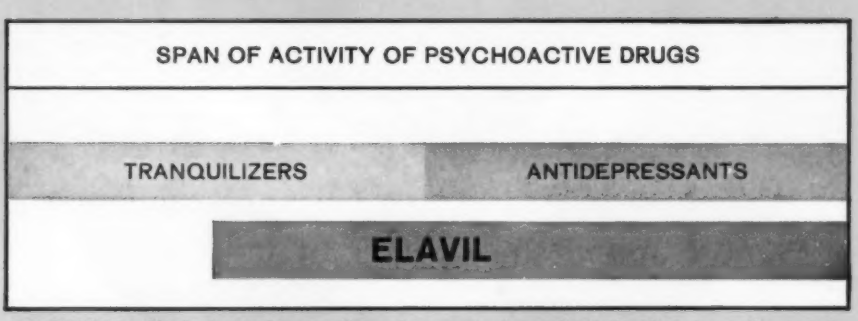

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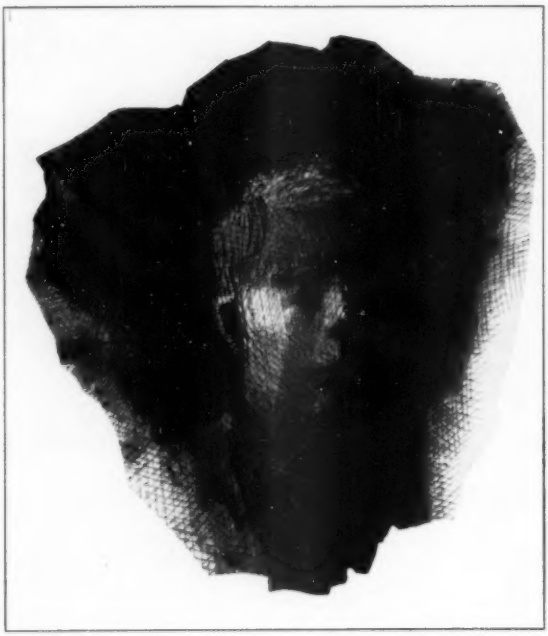

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(As much as 450 mg. daily has been used in some patients.) **Side Effects:** Niamid, in clinical use, has been characterized by a significant lack of toxicity. It is generally well tolerated. Nervousness, restlessness, insomnia, hypomania, or mania, sometimes occur. Occasional headache, weakness, lethargy, vertigo, dryness of the mouth, blurred vision, increased perspiration, constipation, mild skin rash, mild leukopenia, and epigastric distress may be obviated or modified by reductions in dose. Effects due to monoamine oxidase inhibition persist for a substantial period following discontinuation of the drug. **Precautions and Contraindications:** Hepatic toxicity has not been reported in extensive clinical studies. However, if previous or concurrent liver disease is suspected, the possibility of hepatic reactions and liver function studies should be considered. The suicidal patient is always in danger, and great care must be exercised to maintain all security precautions. The apathetic patient may obtain sufficient energy to harm himself before his depression has been fully alleviated. Niamid may potentiate sedatives, narcotics, hypnotics, analgesics, muscle relaxants, sympathomimetic agents, thiazide compounds and stimulants, including alcohol. Caution should be exercised when rauwolfia compounds and Niamid are administered simultaneously. Rare instances have been reported of reactions (including atropine-like effects, and muscular rigidity) occurring when imipramine was administered during or shortly after treatment with certain other drugs that inhibit monoamine oxidase. **In Cardiology:** The central effects of Niamid may encourage hyperactivity and the patient should be closely observed for any such manifestation. Orthostatic hypotension or hypertensive episodes occur in a few individuals and cardiac patients should be carefully selected and closely supervised. **In Epilepsy:** Although in some patients therapeutic benefits have been achieved with Niamid, in others the disease has been aggravated. Care should be exercised in the concomitant use of imipramine, since such treatment with monoamine oxidase inhibitors has been reported to aggravate the grand mal seizures. **In Tuberculosis:** Existing data do not indicate whether resistance of M. tuberculosis to isoniazid may be induced with Niamid therapy; nevertheless, it should be withheld in the depressed patient with coexisting tuberculosis who may need isoniazid. As with all therapeutic agents excreted in part via the kidney, due caution in adjusting dosage in patients with impaired renal function should be observed. **Supplied:** *Niamid (Nialamide) Tablets, 25 mg.: 100's — pink, scored tablets; 100 mg.: 100's — orange, scored tablets.*

More detailed professional information available on request.

particularly useful for depressed office patients because Niamid provides:

Remission of depression—smoothly, gradually, without "jarring." Parker[1] reports that although Niamid is a slow-starting drug it produces a smoother effect than certain other antidepressants—those causing exaggerated CNS stimulant effects such as jitteriness, pressure of activity. "This is an advantage of nialamide [NIAMID] because such side effects frighten depressed patients and retard their improvement."

Notably low incidence of serious complications or side effects. After laboratory tests of patients on Niamid therapy, Ayd et al.[2] found: "Thus, in contrast to other antidepressants, nialamide [NIAMID] has not caused anemia or any disturbance in renal or hepatic function."

Convenience of once-a-day dosage.

1. Parker, S.: Dis. Nerv. System 20:2, Dec., 1959.
2. Ayd, F. J., Jr., et al.: Dis. Nerv. System 20 (Suppl.):34, Aug., 1959.

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Behavior Problems In Children: "At the present time Thioridazine hydrochloride [Mellaril] would appear to increase adaptation and learning of the hyperactive child, in school, at home, and at play. On the basis of this study,* 8 out of 10 hyperactive children placed on a standard dosage of Thioridazine hydrochloride [Mellaril] 10 mg. t.i.d., can remain in school. This improvement has occurred without the appearance of untoward side effects such as: sedation and lethargy...extrapyramidal symptoms...."[2]

Mellaril is indicated for varying degrees of agitation, apprehension and anxiety in both ambulatory and hospitalized patients.

Usual starting dose: Non-psychotic patients – 10 or 25 mg. t.i.d.; Psychotic patients – 100 mg. t.i.d. Dosage must be individually adjusted until optimal response. Maximum recommended dosage: 800 mg. daily. Supply: Tablets, 10 mg., 25 mg., 50 mg., 100 mg.

1. David, N. A., Logan, N. D., and Porter, G. A.: Evaluation of Thioridazine (Mellaril), a new phenothiazine, in the hospitalized patient, A.M. & C.T. 7:364, June 1960. 2. Zarling, V. Richard and Hogan, J.: Control of the Organic Hyperkinetic Behavior Syndrome in the Elementary School Child, Scientific Exhibit, American Academy of Pediatrics, Chicago, October 5-8, 1959.

***Study of 21 elementary school "problem" children.**

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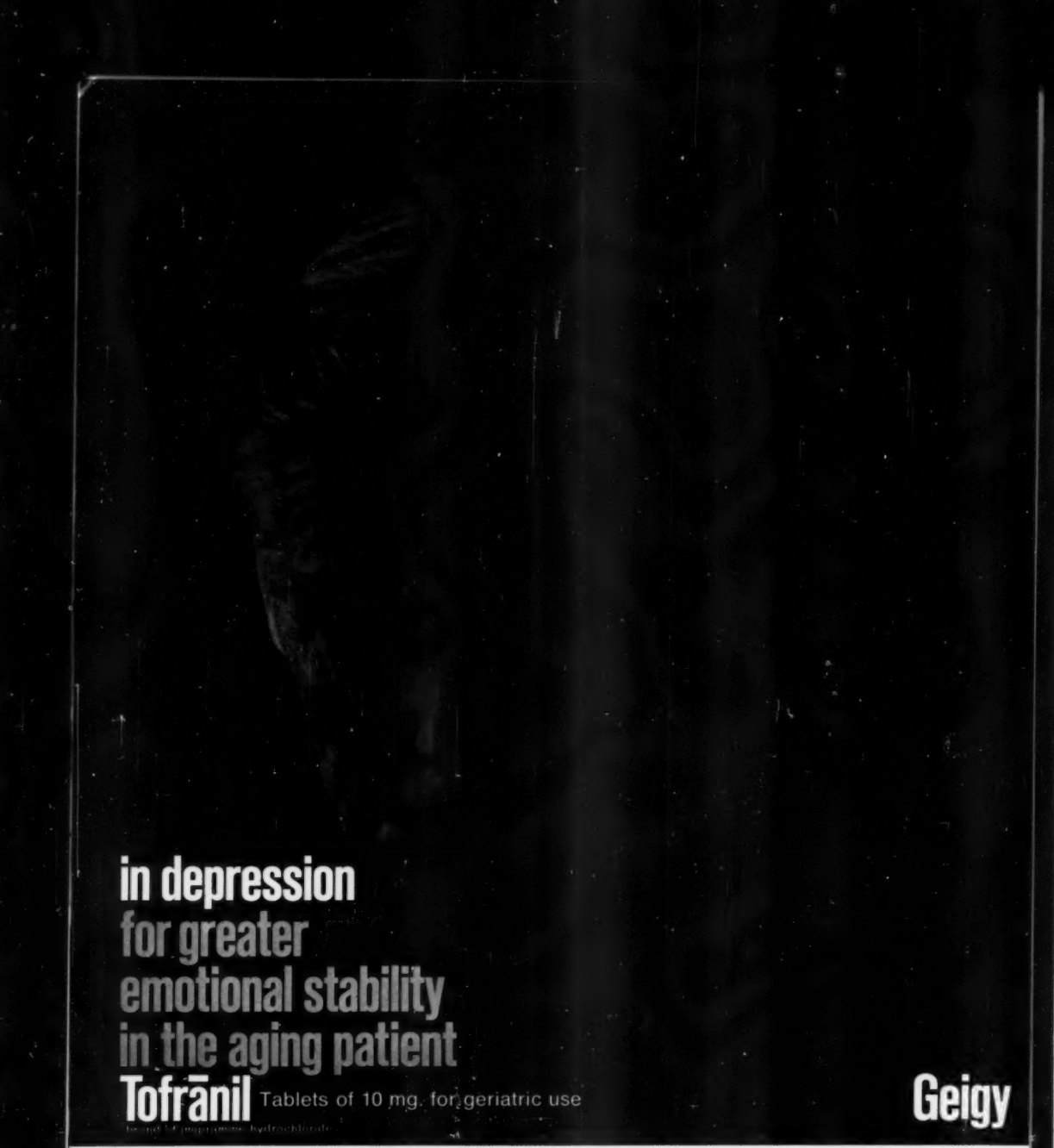

in depression for greater emotional stability in the aging patient

Tofrānil Tablets of 10 mg. for geriatric use

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During the declining years, frustration arising from declining capacity to participate in social and family activities often leads to depression, manifested frequently in unpredictable swings of mood.[1]

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References: 1. Cameron, E.: Canad. Psychiat. A. J., Special Supplement **4**:S160, 1959. 2. Christe, P.: Schweiz. med. Wchnschr. **90**:586, 1960. 3. Schmied, J., and Ziegler, A.: Praxis **49**:472, 1960.

Tofrānil®, brand of imipramine hydrochloride: Triangular tablets of 10 mg. for geriatric use; also available, round tablets of 25 mg., and ampuls for intramuscular administration only, each containing 25 mg. in 2 cc. of solution (1.25 per cent).

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NOLUDAR induces quiet sleep, even in patients with organic psychosis who have severe sleep resistance. Nighttime distortions and fears usually disappear; pre-sleep disorientation and agitation are reduced. NOLUDAR does not modify the EEG of the waking patient nor significantly alter the tracings of physiologic sleep. Further, NOLUDAR does not depress abnormal brain-wave activity. To provide sound, restful sleep without sacrificing safety, without prolonging awakening time, without altering the natural sleep pattern, specify NOLUDAR, the non-barbiturate hypnotic.

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'Thorazine'
Psychiatric Prescribing Information

ADULT INDICATIONS AND DOSAGE

Dosage should always be adjusted to the response of the individual and the severity of the condition. It is important to increase dosage until symptoms are controlled or side effects become excessively troublesome.

Mental and Emotional Disturbances of Everyday Practice—*Starting oral dosage* is 10 mg. t.i.d. or q.i.d., or 25 mg. b.i.d. or t.i.d. After a day or two, dosage may be increased by increments of 20 mg. to 50 mg. daily, at semiweekly intervals (increase should be more gradual in emaciated or senile patients) until achieving maximum clinical response. Continue dosage at this level for at least two weeks; then it can usually be reduced to a maintenance level. A daily dosage of 200 mg. is "average," but in some cases, such as discharged mental patients, daily dosages as high as 800 mg. may be necessary. *Starting intramuscular dose* is 25 mg. (1 cc.). If necessary, and if no hypotension occurs, repeat the initial dose in one hour. Subsequent dosages should be oral, starting at 25 mg. to 50 mg. t.i.d.

Hospitalized Psychiatric Patients—*Acutely agitated, manic, or disturbed patients: Starting intramuscular dose* is 25 mg. (1 cc.). If no marked hypotension occurs, an additional 25 mg. to 50 mg. injection may be given after one hour. Subsequent intramuscular dosages may be increased gradually over a period of several days—even up to 400 mg. q4-6h in exceptionally severe cases—until the patient is controlled. (In elderly or emaciated patients the dosage should be increased more slowly than in other patients.) Usually the patient becomes quiet and cooperative within 24 to 48 hours after the initial dose, at which time oral doses may gradually be substituted for intramuscular doses (mg. for mg. or higher). Even if control is not complete, oral doses may gradually replace intramuscular doses. During this period, oral dosage should be increased rapidly until the patient is calm. Usually an *oral dose* of 500 mg. a day is sufficient but, if necessary, the dosage may be gradually increased still further to 2,000 mg. a day or higher. *Less acutely agitated patients: Starting oral dose* is 25 mg. t.i.d. Subsequently, increase the amount gradually until an effective dosage is reached—usually 400 mg. daily is sufficient. *Duration of therapy:* It is important to determine the optimal dosage regimen and to continue treatment long enough for maximum clinical response. Maximum improvement is sometimes not apparent until after weeks or even months of therapy.

Alcoholism—*Starting intramuscular dose* for severely agitated patients is 25 mg. to 50 mg. (1-2 cc.). Repeat initial dose if necessary and if no hypotension occurs. Start subsequent oral dosages at 25 mg. to 50 mg. t.i.d. *Starting oral dose* for agitated but manageable patients is 50 mg., followed by 25 mg. to 50 mg. t.i.d. For ambulatory patients with withdrawal symptoms or sober chronic alcoholics, *starting oral dosage* is 10 mg. t.i.d. or q.i.d., or 25 mg. b.i.d. or t.i.d. Patients in a stuporous condition should be allowed to sleep off some of the effects of the alcohol before 'Thorazine' is administered.

PEDIATRIC INDICATIONS AND DOSAGE

For behavior disorders—*Oral dosage* is on the basis of ¼ mg./lb. of body weight q4-6h, until symptoms are controlled (i.e., for 40 lb. child—10 mg. q4-6h). Calculate 'Thorazine' Syrup dosage at 10 mg./5 cc. tsp. *Rectal dosage* is on the basis of ½ mg./lb. of body weight q6-8h, p.r.n. (i.e., for 20-30 lb. child—half of a 25 mg. suppository q6-8h). *Intramuscular dosage* is on the basis of ¼ mg./lb. of body weight q6-8h, p.r.n. In children up to 5 years (or 50 lbs.)—not over 40 mg./day. In children 5-12 years (or 50-100 lbs.)—not over 75 mg./day.

IMPORTANT NOTES ON INJECTION

Except for acute ambulatory cases, parenteral administration should generally be reserved for bedfast patients. Parenteral administration should always be made with the patient lying down and remaining so for at least ½ hour afterward. The injection should be given *slowly, deep* into the upper outer quadrant of the buttock. If irritation and pain at the site of injection are problems, dilution of 'Thorazine' Injection with physiologic saline solution or 2% procaine solution may be helpful. Subcutaneous administration is not advisable, and care should be taken to avoid injecting undiluted 'Thorazine' Injection into a vein. Intravenous administration is recommended only for severe hiccups and surgery. Because contact dermatitis has been reported, avoid getting the solution on hands or clothing.

SIDE EFFECTS

The drowsiness caused by 'Thorazine' may be unwanted in some patients. It is usually mild to moderate and disappears after the first or second week of therapy. If, however, drowsiness is troublesome, it can usually be controlled by lowering the dosage or by administering small amounts of dextro amphetamine.

Other side effects that have been reported occasionally are dryness of the mouth, nasal congestion, some constipation, miosis in a few patients and, very rarely, mydriasis.

Mild fever (99°F.) may occur occasionally during the first days of therapy with large intramuscular doses.

During 'Thorazine' therapy some patients have an increased appetite and gain weight. Usually these patients reach a plateau beyond which they do not gain further weight.

CAUTIONS

Jaundice: In the more than 14 million patients who have been treated with 'Thorazine' in the United States, the incidence of jaundice—regardless of indication, dosage, or mode of administration—has been low. Few cases have occurred in less than one week or after six weeks.

Jaundice due to 'Thorazine' is of the so-called "obstructive" type; is without parenchymal damage; and is usually promptly reversible upon the withdrawal of 'Thorazine'.

Because detailed liver function tests of 'Thorazine'-induced jaundice give a picture which mimics extrahepatic obstruction, exploratory laparotomy should be withheld until sufficient studies confirm extrahepatic obstruction.

Agranulocytosis: Agranulocytosis, although rare, has been reported in patients on 'Thorazine' therapy. Patients receiving 'Thorazine' should be observed regularly and asked to report at once the sudden appearance of sore throat or other signs of infection. If white blood counts and differential smears give an indication of cellular depression, the drug should be discontinued, and antibiotic and other suitable therapy should be instituted. Because most reported cases have occurred between the fourth and the tenth weeks of treatment, patients on prolonged therapy should be observed particularly during that period.

A moderate suppression of total white blood cells is sometimes observed in patients on 'Thorazine' therapy. If not accompanied by other symptoms, it is not an indication for discontinuing 'Thorazine'.

Potentiation: 'Thorazine' prolongs and intensifies the action of many central nervous system depressants, such as barbiturates and narcotics. Consequently, it is advisable to stop administration of such depressants before initiating 'Thorazine' therapy. Later the depressant agents may be reinstated, starting with low doses, and increasing according to response. Approximately ¼ to ½ the usual dosage of such agents is required when they are given in combination with 'Thorazine'. (However, 'Thorazine' does not potentiate the anticonvulsant action of barbiturates. In patients who are receiving anticonvulsants, the dosage of these agents—including barbiturates—should not be reduced if 'Thorazine' is started. Rather, 'Thorazine' should be started at a very low dosage and increased, if necessary.)

Hypotensive Effect: Postural hypotension and simple tachycardia may be noted in some patients. In these patients, momentary fainting and some dizziness are characteristic and usually occur shortly after the first parenteral dose, occasionally after a subsequent parenteral dose—very rarely after the first oral dose. In most cases, prompt recovery is spontaneous and all symptoms disappear within ½ to 2 hours with no subsequent ill effects. Occasionally, however, this hypotensive effect may be more severe and prolonged, producing a shock-like condition.

In consideration of possible hypotensive effects, the patient should be kept under observation (preferably lying down) for some time after the initial parenteral dose. If, on rare occasions, hypotension does occur, it can ordinarily be controlled by placing the patient in a recumbent position with head lowered and legs raised. If it is desirable to administer a vasoconstrictor, 'Levophed' and 'Neo-Synephrine'* are the most suitable. Other pressor agents, including epinephrine, are not recommended because phenothiazine derivatives may reverse the usual elevating action of these agents and cause a further lowering of blood pressure.

Causes of Vomiting: The physician should always bear in mind that the antiemetic effect of 'Thorazine' may mask signs of overdosage of toxic drugs and may obscure diagnosis of conditions such as intestinal obstruction and brain tumor.

Dermatological Reactions: Dermatological reactions have been reported. Most have been of a mild urticarial type, suggesting allergic origin. Some of them appear to be due to photosensitivity, and it is advisable that patients on 'Thorazine' avoid undue exposure to the summer sun.

Extrapyramidal Symptoms: With very large doses of 'Thorazine', as frequently used in psychiatric cases over long periods, there have been a few patients who have exhibited extrapyramidal symptoms which closely resemble parkinsonism. Such symptoms are reversible and usually disappear within a short time after the dosage has been decreased or the drug withdrawn. These symptoms can also be controlled by the concomitant administration of standard anti-parkinsonism agents.

Lactation: Moderate engorgement of the breast with lactation has been observed in female patients receiving very large doses of 'Thorazine'. This, however, is a transitory condition which disappears on reduction of dosage or withdrawal of the drug.

CONTRAINDICATIONS

In comatose states due to central nervous system depressants (alcohol, barbiturates, narcotics, etc.), and also in patients under the influence of large amounts of barbiturates or narcotics.

AVAILABLE

Tablets, 10 mg., 25 mg., 50 mg. and 100 mg., in bottles of 50, 500 and 5000; 200 mg., for use in mental hospitals, in bottles of 500 and 5000. (Each tablet contains chlorpromazine hydrochloride, 10 mg., 25 mg., 50 mg., 100 mg., or 200 mg.)

Ampuls, 1 cc. and 2 cc. (25 mg./cc.), in boxes of 6, 100 and 500. (Each cc. contains, in aqueous solution, chlorpromazine hydrochloride, 25 mg.; ascorbic acid, 2 mg.; sodium bisulfite, 1 mg.; sodium sulfite, 1 mg.; sodium chloride, 6 mg.)

Multiple-dose Vials, 10 cc. (25 mg./cc.), in boxes of 1, 20 and 100. (Each cc. contains, in aqueous solution, chlorpromazine hydrochloride, 25 mg.; ascorbic acid, 2 mg.; sodium bisulfite, 1 mg.; sodium sulfite, 1 mg.; sodium chloride, 1 mg. Contains benzyl alcohol, 2%, as preservative.)

Spansule® capsules, 30 mg., 75 mg., 150 mg. and 200 mg., in bottles of 30, 250 and 1500; also 300 mg., in bottles of 30 and 1500. (Each 'Spansule' capsule contains chlorpromazine hydrochloride, 30 mg., 75 mg., 150 mg., 200 mg., or 300 mg.)

Syrup, 10 mg./teaspoonful (5 cc.), in 4 fl. oz. bottles. (Each 5 cc. contains chlorpromazine hydrochloride, 10 mg.)

Suppositories, 25 mg. and 100 mg., in boxes of 6. (Each suppository contains chlorpromazine, 25 mg. or 100 mg.; glycerin, glyceryl monopalmitate, glyceryl monostearate, hydrogenated cocoanut oil fatty acids, hydrogenated palm kernel oil fatty acids, lecithin.)

Concentrate (for hospital use), 30 mg./cc., in 4 fl. oz. bottles. (Each cc. contains chlorpromazine hydrochloride, 30 mg.)

Before prescribing 'Thorazine' in any indication other than those given here, the physician should be familiar with dosage, side effects, cautions and contraindications for such indications. This information is available in: *Thorazine® Reference Manual* and *Physicians' Desk Reference.*

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*'Levophed' and 'Neo-Synephrine' are the trademarks (Reg. U.S. Pat. Off.) of Winthrop Laboratories for its brands of levarterenol and phenylephrine respectively.

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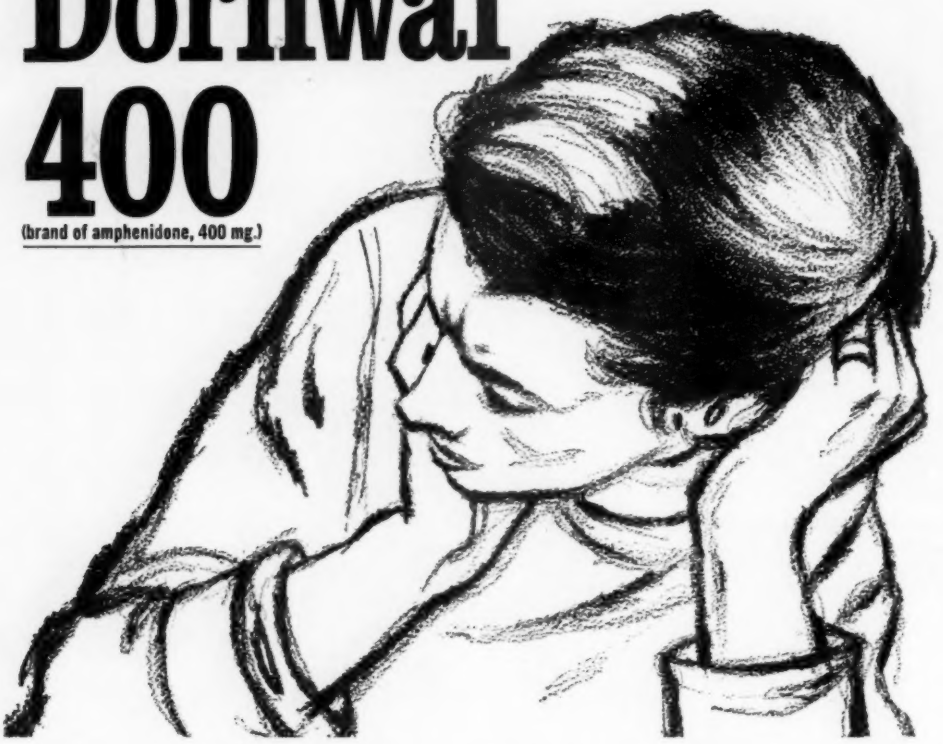

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*Dixon, H. H.; Dickel, H. A., and Dixon, H. H., Jr.: "Clinical and Electromyographic Appraisal of Aminophenylpyridone," Northwest Med. 60:277 (March) 1961.

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*Forster, F. M.: Wisconsin M. J. 58:375 (July) 1959. Literature and bibliography on request.

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For further details please turn to page 38

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